



Sustainable resource extraction and the role of trade unions: the case of Greenland

Study commissioned by the Council of Nordic Trade Unions (NFS)

Prepared by Béla Galgóczi, ETUI, Brussels

etui.
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Preface

The Council of Nordic Trade Unions, NFS, started to increasingly discuss climate change and environment in relations to trade union work and good quality employment in 2009. In the autumn of 2012 we held a large conference in Ålesund, Norway, on the topic of "Sustainable working life - economically, socially and ecologically". It became increasingly apparent to the Nordic trade union movement that climate issues, although not a core issue of trade unions, were not to be neglected.

The trade union position on climate issues is still under development within the trade union movement. International organisations like the ITUC, ETUC, ETUI, and ILO, are leading this development. At the same time we see small scale initiatives on different levels in the trade union movement. At a conference on Greenland in April 2013, some of these examples were discussed, such as becoming a more environmentally friendly organization, or to consider the environment when bargaining for the members and thereby support a green transition of the industry.

The case of Greenland, where global corporations are showing a great interest to exploit the minerals and other natural resources found on the island, is particularly interesting in regards to NFS goal of a sustainable working life. The case of Greenland not only includes a pristine environment, but also a labour market that needs development and new job opportunities.

NFS therefore decided to give ETUI the task to look further into this situation, from a researcher's perspective. Béla Galgóczi, a researcher at ETUI, was assigned with the delicate task. The result is this report. The author of the report is responsible for its content.

This report is meant to be an input to the discussion within the trade union movement in the Nordic countries, on how the trade unions can and should work on issues regarding climate change and environment, in relation to core areas like jobs and economic growth. As the author points out, the trade union movement in the Nordic countries have been successful in promoting workers' rights. The question is whether the Nordic trade union movement can be equally successful in promoting green transition, in order to ensure a future working life that is not only socially and economically, but also environmentally sustainable.

We look forward to a fruitful debate.

The Council of Nordic Trade Unions

Summary

The current economic and growth model of industrialized countries has reached its planetary limits and a transformation towards a low (zero) carbon economy based on higher resource productivity and energy efficiency is essential. This is the major challenge of this century.

The priority of a greening economy would be to produce (more) value with less material and resource input through higher resource productivity and efficiency, not chasing after more and more resources. What we are seeing, however, is a new global race for natural resources. This has also reached Greenland lately and analysts agree that the country is on the verge of fundamental change. A possible conclusion could be that Greenland, like Antarctica, should enjoy a moratorium on resource extraction. Even with such a theoretical alternative, however, we accept that large-scale mining will not be avoided in Greenland.

This paper takes stock of the major challenges of the upcoming mining boom in Greenland, particularly from the social and environmental points of view.

Taking a number of mining conflicts from the literature will help us to identify what priorities the social partners in Greenland need to keep in mind in order to minimise the risks of large-scale resource extraction. International experience of sustainable mining practices will also be reviewed with an eye to possible recommendations.

Based on the available information we present an overview of planned mining activities in Greenland and also review proposed legislation on the use of foreign labour in large-scale projects.

The main conclusions of this review emphasise Greenland's unique situation and evaluate the challenges, formulating some proposals and recommendations.

Greenland's most important feature is the asymmetry between its vast territory and natural resources, on one hand, and the very limited local human resources, on the other. The investment value of a single mining project can equal Greenland's annual GDP and the employment generated by such a project can require 10 per cent of the entire labour force. This presents opportunities, but also risks, both social and environmental. It is vital to ensure the highest level of transparency throughout the investment cycle. This includes financial control and transparency (joining the EITI initiative would be useful) and environmental standards must have priority (independent environmental audits, with continuous access to information by NGOs and trade unions).

Labour regulation should be strict and comprehensive, based on equal rights for domestic and foreign workers, and a high level of health and safety provisions.

The proposed amendments of the so-called 'Large-scale law', with lower employment standards for foreign employment, should be withdrawn or modified substantially.

Introduction

This study emerged from cooperation between the Council of Nordic Trade Unions (NFS) and the European Trade Union Institute (ETUI) to examine the role of trade unions in the challenges emerging with the upcoming resource extraction boom in Greenland.

The main objective of this study is to identify the main social and environmental risks of the expected upsurge of resource extraction in Greenland. The study will also draw upon international experiences and initiatives that might provide useful examples for trade unions when facing such challenges.

Greenland is a pristine natural environment of key importance for Earth's natural balance. The rush for ever more natural resources, be it gas, oil, rare earths or even uranium, has reached Greenland in the past couple of years and large mining projects are due to start this year.

Given the importance and magnitude of the challenge, the first section of this report takes a broader look at the limits of the resource- and energy-intensive growth model that has prevailed since the Industrial Revolution. We address key climate policy initiatives, main trends in emissions and resource use and point to the huge gap between policy targets and actual achievements, with the main message that resource extraction is reaching its limits.

Section 2 examines the potential employment effects of the green transformation beyond the mere concept of green jobs.

Section 3 looks at the changing role of trade unions in the context of the green transformation with a view to what trade unions can do in promoting a an economic model that is sustainable in both social and environmental terms.

Section 4 focuses on the mining and resource extraction industries. We are witnessing a new 'gold rush' for resources, in which the reckless exploitation of nature is gaining new momentum. This section also presents examples of conflicts and draws a number of lessons.

Section 5 deals with international initiatives for sustainable mining.

Section 6 focuses on recent developments in Greenland, describing major projects and their economic rationale and assessing the attendant social and environmental risks.

Section 7 draws conclusions and makes policy recommendations for trade unions.

1. The context of the green transformation

First, we need to look at why the current economic model based on the exploitation of ever more natural resources is no longer sustainable and thus requires a fundamental change towards a low-carbon economy based on major improvements in resource productivity and energy efficiency.

Climate change is the major long-term challenge of this century. The current revision of the pre-crisis credit-fuelled growth model focuses narrowly on financial and economic sustainability, based above all on fiscal austerity and increasing competitiveness by cutting wages. This strategy is counterproductive and deeply unjust, but also neglects the wider picture. The pre-crisis growth model was based not only on an abundance of cheap credit, but also on the assumption of limitless material and environmental resources. Hence any lasting recovery of the real economy will necessarily be based on a more resource-efficient production model. This is also the declared objective of long-term political strategies, such as the Europe 2020 Strategy, but also the main target of the UNFCCC (United Nations Framework Convention on Climate Change based on annual intergovernmental conferences of the parties) negotiations at the global level.

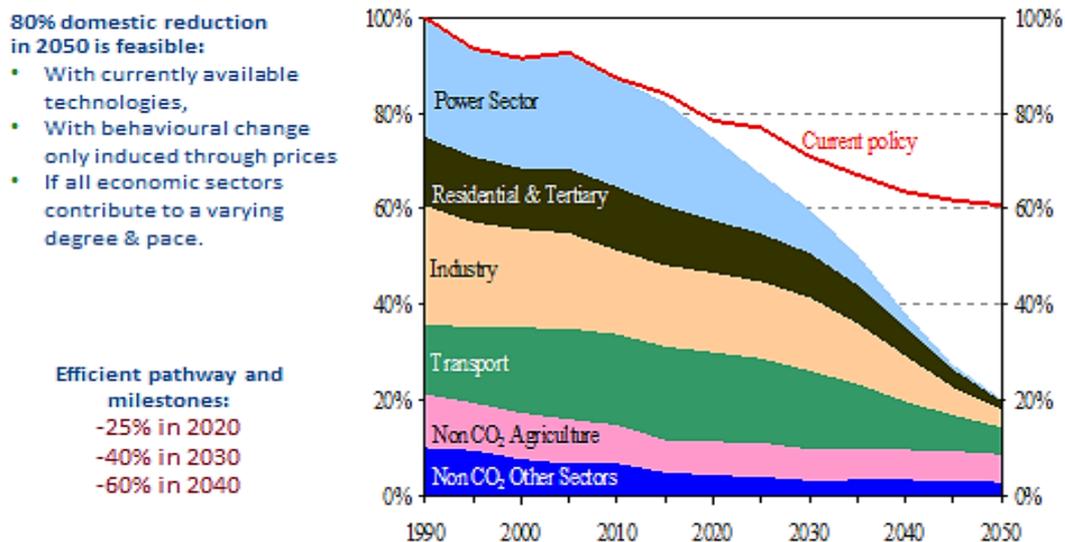
The major challenge is that, based on the current policy framework and practices, we will not get there, not by 2050 or even 2100 (on current trends of decarbonisation, decoupling resource and material use from GDP growth and projections up to 2050, see, for example, UNEP 2011).

Most scientists agree that current UNFCCC emission pledges and commitments will result in additional warming of 3.5 to 4°C (World Bank 2012).

For Europe, despite doing better than the rest of the world, the challenges remain enormously high. Even though the European Commission is optimistic about achieving an 80 per cent reduction in greenhouse gases by 2050, the current track record (until 2010) does not support this and the available policy tools would only achieve a 40 per cent reduction (see Figure 1).

A shift from a resource-wasting production and consumption model towards a 'zero waste, zero emission economy' still needs to happen and the speed of adaptation should be raised significantly. This large-scale restructuring process needs a guiding principle and a comprehensive policy framework. In Europe we have targets and declarations (EU 2020 Strategy and related 'Communications' from the Commission, such as 'The Roadmap to a resource efficient Europe', 'Energy Roadmap 2050') but supporting economic instruments are still scarce and largely missing.

Figure 1: The 2050 Low-Carbon Roadmap for Europe (ghg emissions as a percentage of 1990 level, EU27)



Source European Commission (2012).

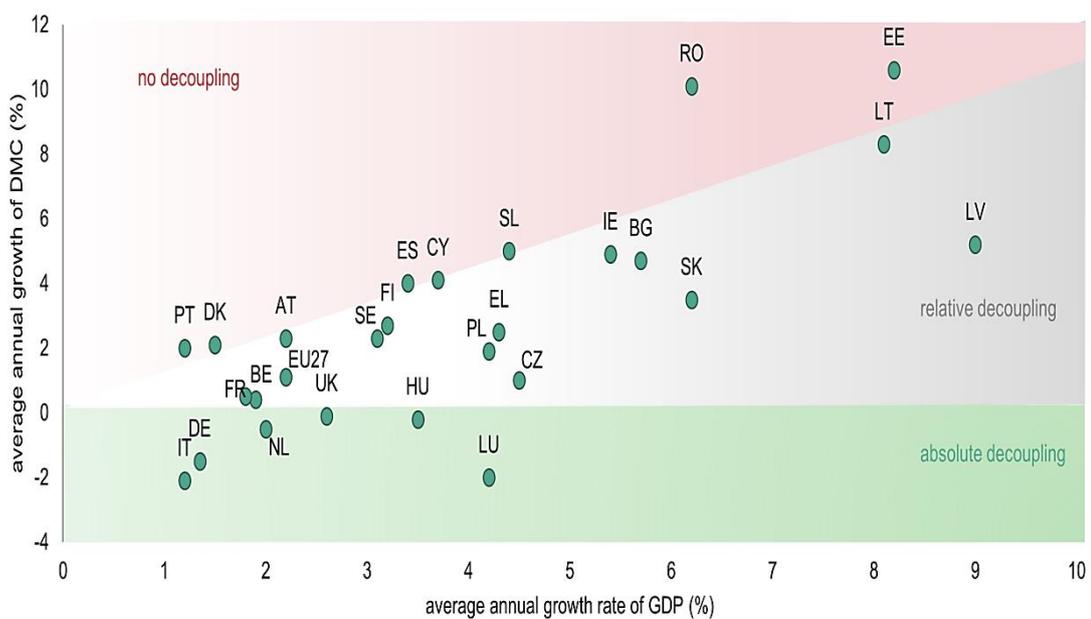
Besides the necessary efforts to bring climate change under control, the concept of a greening economy takes the broader perspective that the current economic model is coming up to its planetary boundaries. If emerging economies such as China, India and Brazil proceed with the production and consumption model pursued by the industrialised countries up to now, our planet simply will not have the necessary resources (taking only the number of cars in these countries into consideration, given the existing density of automobiles in the United States and Western Europe). The normative target here is known as 'Factor Five' – which entails improving resource efficiency by five times; in other words, producing current GDP with one-fifth of the resource input – set as a target for 2050 (Weizsäcker 2009).

It is clear that past trends of material and resource use cannot continue. If economic growth is to be maintained, the only way forward is to 'make more out of less', in other words, to decouple economic growth from resource use.

Recent trends in Europe indicate that this is not happening, even though the continent is doing better than the rest of the world. Annual changes in domestic material consumption of member states against GDP growth rates for 2000 to 2007 show that decoupling GDP growth from resource use has been taking place, if at all, at only a sluggish pace. Stable or decreasing domestic material consumption can be observed mainly where GDP growth is low or during a recession. High GDP growth rates are accompanied by higher material use, in the better cases involving only moderate

increases. Between 2000 and 2007, absolute decoupling of resource use from economic growth (decreasing domestic material consumption) occurred in only six out of 27 EU member states (see Figure 2). Eleven member states showed relative decoupling, with domestic material consumption increasing at a slower rate than GDP. No decoupling was the outcome in the ten remaining countries, where domestic material consumption increased faster than GDP, indicating that resource productivity actually declined in those countries from 2000 to 2007. Besides a number of cohesion countries, Denmark showed no decoupling and the achievements of other Nordic countries were also relatively poor, indeed almost nil (ETUC and ETUI, 2013).

Figure 2: Annual average change in domestic material consumption and GDP between 2000 and 2007 by member state



Source: Eurostat (2011).

The lack of progress in decoupling also shows that we remain light-years away from the normative target of 'Factor Five'.

Against this background we must acknowledge that 2012 was a 'black' year for Planet Earth. Progress towards a more sustainable production and consumption model stalled and no end to the resource-depleting practices of the past was in sight.

Both in Europe and globally climate policy ambitions seem to be fading away as policy efforts become focused on crisis management and austerity. New illusions have appeared in the form of pseudo-solutions for prolonging the age of fossil fuel in forms

such as shale gas extraction and a possible coal renaissance. Political uncertainty and cuts in green subsidies meant that 2012 was the first year in a decade to see a drop in global clean energy investments; in Italy and Spain, for example, clean energy investments fell by 60 to 70 per cent (BNEF 2012).

In relation to mining and resource extraction, the message is clear. A sustainable economic model assumes that we will not extract more and more resources at higher and higher costs in order to maintain an outdated and reckless growth model, but rather create wealth and welfare with less resource input. Planetary balance requires the same level of economic performance with one-fifth of today's resource inputs. In order to achieve this we do not need more oil, gas or iron.

Such large-scale restructuring, moving away from the previously established resource-wasting industrial mass production and consumption model towards a socially balanced and resource-efficient economy requires an adaptation of interest-reconciliation mechanisms, including new strategic approaches by the main actors. This is where trade unions will have an important role.

2. Employment effects and the role of trade unions on the way to a low carbon economy

One of the main concerns for trade unions is the effect of the green transformation on both the quantitative and qualitative aspects of employment.

Tensions and conflicts are emerging as new job opportunities do not always meet all positive expectations, for example, to be environmentally sustainable (green) and also of good quality ('decent'). There are economic situations – depending on a number of factors, such as geographical region, general employment situation or economic structure – in which an optimum solution does not seem feasible. These job opportunities might appear attractive 'here and now', even if the conditions are not optimal, either in terms of their effect on the environment or in terms of job quality, or both. There might be a trade-off between short-term gains and long-term consequences. We shall now provide a brief overview of the possible employment effects of a green transformation, focusing on 'green jobs'.

First, we need to emphasize that the huge gap between climate policy targets and policies actually applied raises considerable uncertainty also in terms of employment effects.

There is a broad consensus in the European literature (for example, Cedefop 2010 and further studies cited in this section) that although climate policies would have no major aggregate impact on the number of jobs, a massive redistribution of jobs is to be expected:

- new jobs will be created;
- existing jobs will be transformed ('greened');
- jobs will disappear.

It is to be expected that there will be huge differences between regions, branches and sections of the labour market.

2.1 Green jobs

There is also a consensus in the literature that jobs identified as 'green jobs' will be net beneficiaries of the process. By green jobs we mean jobs classified under the 'Environmental Goods and Services Sector' (EGSS) based on the UN definition: 'those economic activities whose primary purpose is to reduce or eliminate pressures on the environment or to make more efficient use of natural resources' (UNCTAD 2009).

We need to bear in mind that the concept of 'green jobs' takes a narrow perspective on employment effects, as it looks at the labour market in isolation from the rest of the economy. There are also problems of definition and statistical classification (for a detailed analysis for the Austrian context, see in the study by the Austrian Chamber of Labour 2012).

It also matters whether we take a process- or product-based view of the effect of different economic activities on the environment. Just to illustrate some of these

difficulties, it is worth considering the extent to which and under what conditions the following activities might be seen as 'green jobs':

- the steel industry (with inputs to eco-industry equipment);
- the construction industry (depending on product and technology: what and how you build);
- financial services;
- IT.

Bearing all these caveats in mind, a review of the literature indicates the job creation potential of an emerging green economy.

The most straightforward forecasts link specific policy measures and investment initiatives to green job creation. The European Commission estimated that there would be 2 million new green jobs by 2020 in the EU based on its 2009 policy package linked to the European Energy Efficiency Action Plan (European Commission, 2009a). Indeed, energy efficiency measures in the housing sector would have a great job creation effect if envisaged programmes do not fall victim to austerity measures. In this regard the forecast can be seen as an estimate of green job creation potential. The 'Employment in Europe 2009' report devoted its focus topic to green job creation (European Commission, 2009b), estimating that the Directive on Energy Performance of Buildings will create between 280,000 and 450,000 new jobs in the medium term. New jobs would appear in occupations linked to the retrofitting of buildings and energy management, including related services. The report also reckoned that for each 1 million euros invested in energy efficiency 12–16 new jobs would be created.

The renewable energy sector in Europe employed 1.11 million persons in 2012 and the European Commission reckons that this figure will double by 2020 (EurObserver 2012).

2.2 Estimates of green jobs in the Nordic countries

The Nordic Council of Ministers launched a publication on 'Measuring green jobs', published by Norden (Bruvoll and Ibenholt 2012), based on the UN definition of green jobs.

With regard to Denmark, the study declares (without a forecast) that companies working in the area of climate change represent the largest group within the environmental technology sector, with some 45,000 employees in 2005 (around 1.6 per cent of total employees in Denmark) and close to 80,000 in 2009 (about 2.9 per cent of total employees). Companies operating in the water, air pollution and chemical sectors employed some 21,000 staff in 2005 and close to 40,000 in 2009. Companies in the areas of waste and chemicals employ around half that number.

Turning to forecasts concerning Finland, according to Cleantech Finland the annual growth of the environmental goods and services sector (EGSS) is estimated to have been about 5–10 per cent a year since the end of the 1990s. The 'cleantech-market' grew at a rate of 5.6 per cent from 2009 to 2010. Expected growth for 2011 was 9.6 per cent. Almost half the turnover comes from the energy efficiency sector. In the next few years

the largest growth is expected to come from the production and distribution of renewable energy, as well as energy efficiency, water management and waste management.

For Norway a 2009 forecast predicts employment creation in the following sectors (activities) by 2016:

- wind power: between 1,900–6,000;
- heating technologies: (bioenergy): between 400 and 3,200;
- energy efficiency: 26,000–40,000;
- hydro power: 800–1,250;
- total new job creation estimated at: 29,100–50,450.

For Sweden no details were given, but the share of manufacturing in GDP is expected to grow from 30 per cent (2005) to 35 per cent by 2030, while its share in employment will shrink from 25 per cent to 20 per cent.

This fragmented picture illustrates that there is indeed potential employment in an expanding green economy and that this is the segment in which most future job creation can be expected. Any employment-based strategy should take this into account. For trade unions this is also an important aspect with regard to promoting the greening of the economy.

3. Sustainable development and the role of trade unions

The transformation towards a low carbon and resource-efficient economy is a much broader process, however: it involves a full-fledged restructuring of the economy. Trade unions have a crucial role in managing a successful green transformation, but also face huge challenges and contradictions between short-term and long-term opportunities. Our focus topic – sustainable mining and resource extraction – harbours a lot of conflict potential in this regard.

In a historical perspective the main strategy of trade unions was based on the assumption that social reconciliation between capitalists and the working class would become possible on the basis of the wealth furnished through ever increasing material flows and exploitation of natural resources. Labour and capital were two sides of this modern industrial capitalist production model. On this basis the aim was to win a fair share for labour.

This does not mean that trade unions are still locked-in to this resource-wasting capitalist production model, however (Maier 1990). For capital, labour is one production factor, while natural resources – including the atmosphere – are another. Trade unions have only managed to fight for a decent ‘price’ for labour, while the ‘environment’, another production factor for capital, has not had such efficient representation. Trade unions cannot be blamed for this, of course. It is true, however, that internalising the external costs of using environmental resources for economic purposes requires a profound change. This expands the scope of the traditional capital-labour conflict/dialogue. At the same time, trade unions as longstanding opponents of capital are in a special position to deal with issues linked to the externality of environmental resources.

Trade unions in recent decades have become major societal actors and have strategically raised important issues for a more equal and just society.

Environmental issues and sustainable development have become important pillars of trade union strategy. A key demand of European trade unions within the framework of such an approach is a ‘just transition’, which is now enshrined in the Cancun Declaration (ILO 2010). According to the ETUC (2010), the five pillars of a just transition to a low-carbon European economy include: dialogue between governments and key stakeholders; green and decent jobs through investment in (new) low-carbon technologies; green skills by active government training strategies; a respect for human and labour rights; and strong and effective social protection systems.

Accordingly, trade unions as major social actors will have a crucial role in promoting this profound change towards a low carbon and resource-efficient society, even if this might increase the pressure for deep structural change, with effects on their traditional constituency, namely, working people.

This does not mean that conflicting interests will not arise on this difficult road, however. Conflicts between short-term and longer-term interests and between local and broader priorities are immanent to this process (for example, in situations in which nuclear energy is downscaled or subsidies for coal mining cut, leading to the closure of coal mines). Trade unions are indispensable agents in managing such conflicts.

4. Mining and resource extraction – trends and conflicts

4.1 Recent trends in the mining industry

With having an eye on the main topic of this paper – the challenge of a mining boom in Greenland – in this section we draw back on lessons from mining practices, conflict cases, good and bad practices in the world.

The priority of a greening economy is to produce (more) value using less material and resource input through higher resource productivity and efficiency and not chasing after more and more resources. What we are seeing, however, is a new race for natural resources. The United States and Canada are in the middle of a boom in the exploitation of shale gas and oil reserves, with huge environmental costs, and a growing number of countries seem eager to follow. Energy independence is the magic word, but not in terms of greater energy efficiency or investment in renewable energy generation. The aim is to get more out of old fossil fuel deposits, whatever it takes.

The dramatic increase in mining activities in many developing countries started in the 1990s, following the adoption of neoliberal economic reforms. The Latin American Observatory of Mining Conflicts, for instance, reports more than 150 active mining conflicts in the region, most of which began in the 2000s (OCMAL 2010).

The development of major mining projects in regions of the world previously neglected by the mining industry is an indication of an accelerating trend towards exploring new frontiers.

Mining industry experts talk about a ‘new mining era’ (Economist 2013a):

The reigns [of past mining bosses] were marked by what are likely to be peaks in commodity prices and a slew of attempted mega-mergers, none of which was successful before Glencore got its hands on Xstrata. The next set of bosses will have to deal with a cooling Chinese economy and determine what mix of commodities will best suit the country’s switch from investment to consumption. That won’t be an easy task. [...]

The new chief executives will also have to keep an eye on spiralling costs while moving into new territories to find new ore bodies, particularly in Africa. The rise of resource nationalism and the trouble and expense of breaking ground in unfamiliar places makes that a tricky task. (Economist 2013a)

Indeed, what we see is that extraction by Chinese firms of all sorts of minerals in Africa is expanding rapidly. Brazil sees its future wealth in new oil and gas field exploration. Mongolia is said to be becoming the ‘Saudi Arabia’ of rare earths. Further examples include Kyrgyzstan and Mauritania; the race to control new strategic minerals and rare earth elements; and the start of deep sea mining ventures, such as the recently approved Nautilus project in Papua New Guinea.

Greenland and the wider Arctic region is becoming the next target in the hunt for more resources. The opinion of the vice-president of Hudson Resources, a global mining company, on Greenland after the March 2013 elections was as follows (The Economist 2013b): ‘Greenland offers relatively low corporate taxes, and an environment that

requires no royalty payments or the challenge of having to deal with aboriginal land claims issues. Permits can also be secured within a six-month window.'

The Economist held an Arctic summit in March 2013 with the title 'A new vista for trade, energy and the environment' and with the following advertising text:

The retreating Arctic ice offers access to precious minerals and new sea lanes—but also carries grave risks. The resource-rich Arctic is changing faster than anywhere on Earth, and its biggest transformation is just ahead. Due to climate change, the polar ice cap is shrinking and floating summer ice is projected to disappear altogether, setting alarm bells ringing for environmentalists, but opening up new perspectives for trade and development.

One might ask what kind of development is involved here.

Studies that look more closely at the mining industry question the assumed link between development and mining expansion, and in many cases associate mines not only with a spectacularly unequal distribution of wealth, but also with unsustainable patterns of growth (Bebbington et al. 2008).

The general assumption of mainstream economists is that the opening up of the broader Arctic region for mining and resource extraction would generally be welcome and bring benefits. The region is supposed to have 30 per cent of the world's undiscovered gas and 13 per cent of its undiscovered oil resources, together with an abundance of rare earth deposits. There are some concerns about the safety of operations in such a harsh climate, as well as risks to the local environment in terms of oil spills and other forms of environmental degradation. What is missing from these calculations, however, is the broader picture: the impact on the whole planet.

Paul Whiteman and co-authors recently published an article in *Nature* in which they calculated the costs of a melting Arctic, as the region is pivotal to the functioning of Earth systems, such as oceans and the climate. Accordingly, the release of methane from thawing permafrost beneath the East Siberian Sea, off northern Russia, alone comes with an average global price tag of \$60 trillion in the absence of mitigating action — a figure comparable to the size of the world economy in 2012 (about \$70 trillion). The total cost of Arctic change will be much higher. (Whiteman et al. 2013)

The methane release may bring forward by 15–35 years the average date at which the global mean temperature rise exceeds 2°C above pre-industrial levels: to 2035 for the business-as-usual scenario and to 2040 for the low-emissions case. This will lead to an extra USD 60 trillion (net present value) of mean climate-change impacts for the scenario with no mitigation, or 15 per cent of the mean total predicted cost of climate-change impact (about USD 400 trillion).

Whiteman concludes: 'In all these cases there is a steep global price tag attached to physical changes in the Arctic, notwithstanding the short-term economic gains for Arctic nations and some industries' (Whiteman et al. 2013). Is it worth it, one might ask?

Although this new hunt for resources cannot be pushed back merely by raising concerns, it is worth considering what can be done to get these processes under control.

4.2 International conflicts

Below we provide an overview of international practices and conflict cases that might deliver lessons for new resource extraction projects with a particular attention to planned activities in Greenland. As we will see in Section 6, Greenland has a number of features that make it unique. However, there are analogous cases elsewhere in the world that can offer a number of valuable lessons.

Although Greenland is a high income country with close links with the Nordic countries, it is vulnerable because of its combination of a large territory and, correspondingly, vast natural resources and a tiny population. When confronted by leading multinational mining companies, the power relations might reflect those characteristic of developing countries. A second feature is the importance of the environmental balance of Greenland for the whole planet (in that regard only the Amazonian rain forests have a similar significance). The third aspect is the involvement of foreign labour on a massive scale. Finally, Greenland has the potential for close involvement by trade unions and civil society in terms of both project preparation and conflict management, with regard to which experiences from industrialised countries with developed institutions may deliver valuable lessons.

We have selected three types of conflict. First, we look at mining conflicts in developing countries (mainly in Africa and Latin America) that were taken up by environmental justice organisations and can offer general lessons about the main types of local conflict (4.2.1). We then turn our attention to more specific cases, such as an oil drilling project in Yasuni nature reserve that attained global importance. The aim here was to stop a resource extraction project that would inflict major damage on the planet as a whole in exchange for compensation from a fund to be raised by developed economies (4.2.2). We also examine two cases in North America where local job gains, on one hand, and broader risks, on the other, stand against each other and where the challenges to trade unions are explicit (4.2.3).

4.2.1 Mining conflicts in developing countries

The Environmental Justice Organizations, Liabilities and Trade (EJOLT) project examined 24 real-world cases from 18 different countries with the main aim of portraying the debates and conflicts in the mining industry, as well as of recognising the significance of mining conflicts in the transition to sustainability and the role that environmental justice movements might play in strengthening environmental liabilities in legislative and governance processes (EJOLT 2012).

The case studies follow a standardised structure, looking at the location, the project, the social and environmental impact, the conflict, the main actors and resolution strategies.

Among the major concerns that emerged from the conflicts the importance of financial transparency has emerged as a key issue. Even if colonialism remains a bad memory, multinational mining companies are often more powerful than many of the national governments that are affected by mining (this is particularly true of a vast country with a small population, such as Greenland). The benefits of extracted natural resources should contribute primarily to the wealth and well-being of the local population and not (only) to the profits of multinational companies.

Technological safety is a crucial issue: conflicts have often been related to leaks and pollution of the local environment (soil, water, air). The exposure of workers and the local population to health and safety risks has also been a major element of the conflicts. This is particularly the case with gold mines, where enduring health damage is a serious issue.

Two major conclusions with wider repercussions can also be drawn from the project.

One of the main difficulties for environmental justice organizations is to obtain independent expert opinions in order to challenge the often biased and inadequate reviews of official environmental impact assessments.

The other important lesson is that setting up independent monitoring programmes both inside and outside mines seems to be crucial, so that results may be compared with those obtained by governments and the mining companies.

Although to some extent Greenland is in a different situation from many of the affected developing countries, mainly in Latin America and Africa, there are a number of common features and vulnerabilities. Although Greenland is a developed nation with close links to the Nordic countries, it has a small population dispersed over a vast area and its capacities in terms of both human and financial resources are smaller than those of any of the investing mining multinationals (the investment value of some of the planned mining projects exceeds the entire GDP of Greenland). This is a serious asymmetry that puts Greenland into a vulnerable position. Therefore, financial transparency is vital. Independent environmental impact assessments should also be provided and access to information should be made available to NGOs, trade unions and other stakeholders.

4.2.2 Yasuni Nature Reserve, Ecuador – a model initiative and a model failure

The idea behind this initiative was to raise global contributions in order to prevent an oil drilling project in the Amazonian rain forest.

In 2008 the government of Ecuador launched an initiative to collect USD 3.6 billion (half the forecasted exploitation revenues) in contributions from industrialised countries in exchange for abandoning an oil drilling project in the Yasuni national park, which had been declared a biosphere reserve by the United Nations in 1989.

Box 1: The Yasuni initiative

The plan envisaged rich countries paying Ecuador about half the revenue expected to be generated over 10 years from the 846 million barrels of heavy crude oil estimated to be in Yasuni nature reserve oil field. Ecuadorean officials said that not drilling in the reserve would keep 410 million metric tonnes of carbon dioxide from entering the atmosphere. Ecuador is an OPEC member that depends on oil for one-third of its national budget. The three oil fields in Yasuni represent 20 per cent of its oil reserves.

In August 2013 the President of Ecuador declared the fund had raised just USD 13 million in actual donations and USD 116 million in pledges and he had an obligation to his people, particularly the poor, to move ahead with drilling (Guardian 2013).

It is important to see that beyond the effects of the drilling on the local environment, including biodiversity and local tribal life, the natural resources of Amazonia have a global effect, helping to maintain the balance of the planet.

It was in the long-term interest of the earth as a whole to leave those oil reserves in the ground. This is why the project was seen as a model case and why it also has lessons for Greenland.

Because the initiative ended in spectacular failure, it demonstrates the difficulty of finding forward-looking solutions to keep human development within planetary bounds to prevent excessive climate change and tackle long-term environmental challenges on an international level. What generally prevail are day-to-day economic and political interests.

4.2.3 Recent conflicts in North America with a challenge for trade unions

Two recent investments in North America demonstrate the tensions that may arise for trade unions with regard to difficult decisions concerning major energy or mining projects. Both cases promise short-term economic and employment benefits, but also pose serious long-term environmental risks to the planet. Trade unions faced difficult challenges with conflicting positions within their own constituencies.

4.2.3.1 Keystone XL Oil pipeline

The oil pipeline can be regarded as a critical infrastructure project for supporting oil production largely from Canadian tar sands and from other US explorations and thus prolong the reign of fossil fuel with all its long-term negative consequences for the local environment but also for the planet as a whole.

Box 2: The Keystone XL Pipeline

The Keystone XL Pipeline Project is a proposed 1,179-mile (1,897 km), 36-inch-diameter crude oil pipeline, beginning in Hardisty, Alberta, Canada, and extending south to Steele City, Nebraska. Along with transporting crude oil from Canada, the Keystone XL Pipeline will also support the growth of crude oil production in the United States from producers in the Bakken region of Montana and North Dakota. This pipeline will allow Canadian and American oil producers more access to the large refining markets found in the American Midwest and along the US Gulf Coast. For more detail, see: <http://keystone-xl.com/about/the-project/#sthash.SLmaTTBG.dpuf>

The website of the Canadian building company TransCanada boasts that ‘the construction of the 1,179-mile Keystone XL Pipeline will require 9,000 skilled American workers’. On the environmental impact the website says: ‘Oil pipelines are safe and efficient, and TransCanada has one of the best safety records in the industry.’

The large-scale oil pipeline is a sensitive issue for both trade unions and the US government. On one hand, the major infrastructure investment would boost economic development and jobs. On the other hand, the project creates an opportunity to exploit more and more oil from the tar sands reserves in both Canada and the United States and thus may initiate a spiral of unsustainable drilling. There are concerns about the direct environmental effects at the drilling locations and the environmental effects of the

pipeline itself, but more importantly also about its multiplier effect on oil drilling. Environmental organisations and NGOs are vehemently against the project.

Trade unions, however, face major tensions between two of their objectives. On one hand, they have environmental commitments and also support the transformation towards a greener economy. They also have important alliances with environmental NGOs, within the framework of which US trade unions played a pioneering role with the Blue-Green Alliance initiative (for more, see: <http://www.bluegreenalliance.org>). On the other hand, investment projects are involved in which there are job opportunities 'here and now': even though they may have detrimental effects in the longer term and for a broader community, it is hard to say no, especially when there is strong local support. The AFL-CIO trade union issued a statement in early 2013 endorsing 'expanding the nation's pipeline system'.

It did not mention the Keystone XL pipeline itself, but obviously that pipeline is also included. It was clear that its member unions from the construction sector were very much in favour of the project, while NGO partners of the union strictly oppose it.

Scientists are very critical of the Keystone XL pipeline and particularly the massive oil drilling in the tar sands. These low quality residual oil reserves contain twice as much carbon dioxide as conventional oil reserves.

James Hansen, NASA scientist, published an article in the *New York Times* with the conclusion that, with the massive exploitation of the tar sands, 'it will be game over for the climate' (Hansen 2012).

4.2.3.2 The Murray River coal mining project, Canada

Another mining project in Canada has further similarities with the case of Greenland, as it also involves Chinese investors and Chinese labour, like many of the planned projects in Greenland. The coal mining investment on the Murray River in Canada is planned by a Chinese company and it intends to use Chinese labour in the operation. The project is under fire from both NGOs and trade unions. The mining investment would create up to 600 permanent jobs, and over a lifespan of 30 or more years yield up to three billion tons of coal (CBC News 2013).

In April 2013, a Chinese partnership obtained permission from the federal Canadian authorities to hire 201 foreign workers on a temporary basis, for the development of a potential underground mine near the village of Tumbler Ridge on the Murray River.

British Columbia trade unions initiated a judicial review of the decision by the Canadian federal government to issue the temporary foreign-worker permits, while the case has also prompted a federal review of the temporary foreign workers programme.

The employment minister of British Columbia acknowledged that there are big problems with the federal government's temporary foreign worker programme. He said that 'the Chinese company didn't do a good enough job of looking for qualified Canadian miners and people and unions are angry about the situation'. According to a CBC press report: 'The company claims that no other mine in Canada is currently using the methods it plans to employ at its Murray River project in Tumbler Ridge, a technique called long-

wall mining, in which coal is extracted along a wall in large blocks and then carried out on a conveyor belt' (CBC News 2013).

The lesson here is that employment opportunities play a central role for both the local and federal government, as for trade unions.

The issue of opening a coal mine was not a source of conflict; neither was its local environmental impact nor its broader impact in terms of CO₂ emissions. One might have expected the federal government in Canada to set emissions targets in such a way that opening the coal mine would have to reflect the price of environmental externalities and thus probably not prove to be a profitable investment opportunity. Canada in this regard is lagging behind other developed nations, as it did not ratify the Kyoto Protocol and it does not have an effective climate policy.

The conflict escalated on the opening of the mine with regard to the conditions of the temporary use of foreign labour, in this case Chinese labour. The main issue was the potential substitution effect of using Chinese labour on the local labour force.

4.3 Lessons to be drawn from international conflicts

Financial transparency and independent environmental impact assessment are two pillars of mining investments anywhere in the world. This is one major general lesson from the international conflicts that we have examined. Some of the most intense global mining conflicts have their roots in land expropriation issues and property rights, issues less critical for Greenland. Many conflicts concerned the direct environmental and health effects of extraction activities on people living near mining activities and their hazards. This, again, is less of a threat for Greenland due to its vast territory and low population density.

Nevertheless, technological safety should be a top priority and standards should be monitored continuously. Labour standards, working conditions and decent pay should be applied according to ILO norms. Protective equipment should be provided for workers (foreign or domestic) in accordance with the highest standards.

Restoration of landscapes, soil and water after the termination of mining activities should also be the norm.

The North American conflicts also offer lessons for Greenland that we will look at in more detail in the conclusion. As most of the planned mining and resource extraction projects in Greenland aim to use Chinese labour in the initial construction phase, the Canadian mining conflict has high relevance, mainly with regard to the effects on labour standards. Given Greenland's small population and limited labour supply, employing foreign labour will be unavoidable. The direct substitution of domestic by foreign labour is less of a danger than in countries with a much bigger labour supply. Nevertheless, maximising domestic labour, including necessary training programmes, should be a condition of investment contracts.

5. Initiatives for sustainable mining

5.1 International agreements and initiatives

5.1.1 Extractive Industries Transparency Initiative

The international Extractive Industries Transparency Initiative (EITI), to which 32 countries have signed up, requires standardised annual reports from its members (to date, Norway is the only European member).

Box 3: EITI criteria

The most important transparency criteria include:

- regular publication of all material, oil, gas and mining payments by companies to governments ('payments');
- civil society should take an active part in the design, monitoring and evaluation of this process and contribute to the public debate;
- a public, financially sustainable work plan for all the above should be developed by the host government, with assistance from the international financial institutions.

Source: <http://eiti.org/eiti>.

The importance of this initiative is to ensure full transparency of finances, revenues and profits linked to mining activities. This is necessary for sustainable mining, as transparency has a key role in controlling powerful mining multinationals.

5.1.2 Bilateral Investment Agreements

Bilateral Investment Treaties (BITs) are agreements between two countries that protect and promote investments by investors of one contracting party in the territory of the other. Investment treaties also provide an opportunity to bind the preferential status and protection of investors of a contracting nation to certain conditions concerning labour relations and environmental standards. A publication manual prepared by the International Trade Union Confederation (ITUC) provides an overview of the dispute mechanisms contained in investment treaties:

Many of the disputes were over public services and natural resources: 42% of cases involved public services including water, electricity, telecoms and waste management, while 29% of cases involved oil, gas and mining (ITUC 2012). An OECD paper (OECD 2007) on international investment agreements provides an overview of the inclusion of labour, environmental and anti-corruption issues in investment agreements. Out of the examined 39 countries, 'fifteen had included labour, environmental and, to a lesser extent, anti-corruption language in one or more agreements'.

The ITUC manual recommends that trade unions 'make sure that in case of new bilateral investment agreements strong clauses must refer to respect of the OECD Guidelines for

Multinational Enterprises and the ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy’.

Greenland should also try to ensure that any Bilateral Investment Treaty with partner nations – many seem to be eager to invest in Greenland – contains these important international guidelines for both labour and environmental standards.

5.2 Corporate social responsibility in sustainable mining

A series of initiatives either by mining companies or mining federations seek to provide assurances that their operations are safe, transparent and have the smallest possible environmental impact. Whether we regard these corporate social responsibility initiatives merely as public relations exercises or even an attempt to ‘green-wash’ the industry or acknowledge that some of them are useful, a number of lessons can be drawn.

5.2.1 Canada Mining Association: Towards Sustainable Mining (TSM)

TSM is an industry-wide initiative by the Canada Mining Association to help mining companies evaluate and manage their environmental and social responsibilities. The strength of the initiative is that it sets standards and develops a performance-based programme for member organizations. Although fulfilment of the criteria is non-binding, TSM progress reports make the performance of its members public. The website of the TSM progress report states: ‘In essence, TSM ensures companies are operating in a way that aligns with evolving societal priorities and expectations as they relate to community engagement, safety and health, energy use and the environment’ (Canada Mining Association, 2012).

5.2.2 Talvivaara corporate social responsibility

This is a corporate social responsibility initiative of a single mining company in Finland that operates in a forested landscape in the sparsely populated Kainuu region that was in its natural state before mining activity began. The start of mining operations meant a massive intrusion in nature, as vegetation has been removed and the area's water bodies are used as sources of raw water for the mining company. Nevertheless, the company is committed to preserving biodiversity and conserving the landscape. As the company's website puts it: ‘The key objective of Talvivaara – in accordance with the environmental permit – is to keep the impact of Talvivaara's mining operations on the area and its wildlife within the scope of regular monitoring’ (see more under: <http://www.talvivaara.com/Sustainability>). Recultivation of the landscape after the termination of mining operations is also included in the commitments.

Although both initiatives seem to be useful, corporate social responsibility itself cannot be seen as a major solution to cope with the environmental impact of the mining industry.

5.3 Some lessons on sustainable mining

These examples show that there is a strong focus on transparency in terms of distribution of mining incomes, to some extent also the direct environmental effects on population and biodiversity.

Attention is also being paid to direct safety risks and related direct environmental effects (such as oil spills, or water contamination). Standards are higher now and legal precedents have been established (Deep Water Horizon).

There is less focus on the long-term consequences and climate effects, however. Here we have only one-sided declarations and corporate social responsibility initiatives: this is clearly not enough.

With regard to social aspects, we have the ILO norms as basic guidance, together with European social standards and national standards (either labour law minimum criteria or collective agreements). These are partly taken up in Bilateral Investment Treaties, but a stronger legal basis is necessary.

6. Greenland: challenges posed by the upcoming mining and resource extraction boom

6.1 Recent mining boom in Greenland

There is a new 'gold-rush' for mineral resources worldwide. It is already evident in the United States, Canada, Brazil and Mongolia and now it is coming to Greenland.

How much will the people of Greenland benefit from entering this race? In the search for more and more resources a balance should be sought between the economic needs and benefits of the population, on one hand, and the risks and side-effects in terms of environmental damage, also because of the scale and intensity of mining activities, on the other. Greenland is also a special case: it is a pristine landscape and its ecological balance is critical for the whole planet (in this regard only Amazonia and Antarctica are comparable).

Greenland is a unique geographical and political entity; some of its features can only be adequately expressed in superlatives. Geographically, it is part of the North American continent; historically, culturally and politically it is part of Europe.

Greenland is at a turning point of its history, striving for more economic independence and embarking on a new economic model based on the extraction of natural resources on a massive scale. In what follows we shall focus on this phenomenon and its possible effects on both Greenland and the whole planet.

The economic reality is that Greenland wants to create an independent economic basis and, given its natural resources, their exploitation appears to be the 'best choice' for the well-being of its 57,000 population. But Greenland is also special in another respect: it has a small population on a very large territory. It has very close links to the Nordic countries and, although not a member of the EU, relations are strong.

However, the special risks of resource extraction in the Arctic need to be kept in mind. As the recent findings by Whitman et al. (2013) show, the risks of drilling in the Arctic permafrost are primarily attached to methane leakages, with their devastating effects on the climate and an estimated global price tag that exceeds global GDP several times over (see above).

6.2 Facts and figures about Greenland

Greenland is the world's largest island and about 81.6 per cent of its territory is covered by an ice cap and glaciers (comparable only to Antarctica). Nevertheless, the ice-free area is almost as large as Sweden, although only a small part of this is arable land.

Greenland's territory is the twelfth largest on earth, but with a population of only 57,714 it ranks 204th. Greenland has the lowest population density on Earth: while it is more than four times bigger than France, its population would fit into a Paris suburb.

After centuries of Danish colonial rule, since 1979 Greenland has been a self-governing overseas administrative division of Denmark.

Greenland is thus an autonomous external territory of the EU member state Denmark, but not itself an EU member.

When Denmark joined the European Economic Community in 1973, Greenland as an integral part of it also became a member state. In 1983, however, a majority of the population voted for Greenland to withdraw from the EEC in a referendum and Greenland officially withdrew in 1985. In 1979, Denmark granted home rule to Greenland, and in 2008, Greenlanders voted to transfer more power from the Danish royal government to the local Greenland government. Under the new structure, based on the Act on Greenland Self-Government that came into effect in June 2009, the Danish government maintains control of foreign affairs, national defense, the police force and the justice system. Denmark also controls monetary policy as Greenland has the Danish krone as currency. Financial policy is coordinated in consultation with the Danish government (Norden, 2012).

A further element of the island's unique status is its annual subsidy from Denmark of around USD 650 million (in 2012). With additional proceeds from the sale of fishing licenses and annual payments from the EU this makes up approximately 56 per cent of Greenland's annual government revenues. This constellation grants Greenland a further world record: taxes and government revenues make up 79 per cent of its GDP, making it number one in the world in this respect. GDP (at market exchange rates) is USD 2.16 billion (2011), which allows the population a high per capita average income of around USD 37,000 (CIA, 2013). The annual subsidy from Denmark is set to be reduced gradually over time as the economy of the island is strengthened by increased income from the extraction of natural resources.

Greenland is a welfare state and has the main attributes of the Nordic countries, with universal social security coverage, a high level of income redistribution, sophisticated child care, a regulated labour market and low inequality.

Greenland's economy currently has a mono-industrial structure, dominated by fishing. Exports in 2010 were worth USD 384.3 million, of which 89 per cent were fish and fish products, while 10 per cent were minerals.

Greenland has a relatively young population with a median age of 33.5 years.

The age structure of the 57,714 population (2013) is the following: 0–14 years: 21.6%; 15–24 years: 16.8%; 25–54 years: 42.8%; 55–64 years: 10.7%; above 65 years: 8.1%. The labour force numbers 33,670 persons, with an unemployment rate of 4.9 per cent for 2011 (CIA, 2013).

6.3 Major mining projects in preparation

Although as of mid-2013 not one mining or oil drilling project has got off the ground, more than 100 exploration licenses have been awarded.

The major hope of the mining companies is that Greenland will permit them to extract uranium as a by-product of the rare earth deposits that are believed to be among the largest in the world outside China, which currently accounts for 90 per cent of global production.

In a recent interview with the *Wall Street Journal* (August 2013), newly elected Greenland Prime Minister Aleqa Hammond declared that 'mining will come to Greenland'. Mrs Hammond also said: 'it's important Greenland allies with countries that have an interest in funding projects', and which ones do not matter. 'We will not only be needing funds from outside', she said, 'we will also be needing hands from outside'.

Box 4: Major mining projects planned in Greenland

US mining company **Alcoa** has started preliminary investments for an aluminium smelter that would rely on Greenland's lakes for hydroelectricity. Instead of US workers the company may be willing to hire an estimated 3,000 workers from China.

The **Australian Greenland Minerals and Energy Ltd** reckons that it could extract 40,000 tonnes of rare earth metals per year, with uranium as a by-product. The company recently demonstrated that a high grade flotation concentrate can be produced from its Kvanefjeld project in southern Greenland where a feasibility study is currently under way.

Hudson Resources also plans to develop a rare earth elements project in the Sarfartoq Carbonatite Complex in west Greenland. The main interest of the company in 2013 will be focused on its 100 per cent-owned White Mountain anorthosite project, where the first mineral resource estimate resulted in a deposit estimate of 27.4 million tonnes in the indicated resource category.

London Mining Plc. is expected to obtain preliminary permits by the end of 2013 for the \$2.35 billion Isua iron-ore project, which local authorities estimate will create 700 permanent jobs. Some 3,000 Chinese workers are planned to be employed in the construction phase. The project is owned by the UK London Mining Company but it was designed and funded by an international team backed by Chinese government-run companies. Mining iron ore above the Ilulialik fjord would be a massive operation, starting with plans to dynamite a 180m thick plaster of ice. A 100km long pipeline would be built from the mountain to a new port. Ships loaded with ore would then transport the minerals directly to China, hopefully via a North Pole shortcut using the summertime ice retreat.

Australia's Ironbark Zinc Plc reported in July 2013 that it had found a Chinese partner company to finance and build a base metals mine at an investment value of USD 485 million in northern Greenland.

The Canadian mining firm **True North Gems Inc.** is reported to have obtained the support of Chinese bankers and miners to excavate rubies in the Aappaluttoq Ruby Project (rubies are especially popular in China and India). Public hearings on the project were planned for the last week of August 2013, as part of the Social Impact Assessment and the Environmental Impact Assessment. These procedures are carried out by the government of Greenland. The Minister of Industry and Minerals, and the Minister of the Environment will lead the Greenland government delegation.

With a view to building a hydropower plant near Ilulissat at an investment value of USD 180 million, a supply port and roads, tunneled below a frozen lake have been built by the Greenland utility **Nukissiorfiit**.

Sources: Euractive (2012); Stockhouse (2013); Wall Street Journal (2013).

6.4 The 'large-scale law' and its possible effects

To attract foreign capital into large-scale investments in Greenland an amendment to the Mineral Act, an amendment to the trade regulations and a new act on large-scale projects has been passed (referred to as the 'large-scale project act').

The new legislation proposes changes to the current employment regulations in Greenland with the aim of boosting investment in large-scale projects that are of particular importance for the country's economic development. The proposed legislation applies only to construction activities connected to investments in the exploitation of minerals, raw materials or hydropower for the generation of energy.

The government of Greenland, Naalakkersuisut, has passed an amendment of the Large-scale Project Act aimed at granting incentives and advantages for foreign mining and exploration companies to invest in Greenland.

The law firm Eversheds points out in its report: 'The amended Act suggests significant changes in the scope of application of the legislation with regard to defining a "large-scale project", as well as the extent to which a foreign collective agreement is allowed to regulate wages in relation to projects carried out in Greenland' (Eversheds 2013a).

After a round of consultations and corresponding modifications the Act was amended and passed the closing third reading on 7 December 2012. The legislation is not yet in effect, however, as the approval of the Danish government is also necessary for that. According to the Act of Greenland Self-Government, Denmark withholds competency to enact legislation in this area. Processing by the Danish government has, due to the complexity of the bill, been postponed to a later stage during 2013. At the time of writing (August 2013) this has not yet occurred.

In principle, the foreign workers involved in the operations would be entitled to the same labour rights as Greenlandic workers, including the right to strike, to organise and to bargain collectively.

However, foreign employees who are subject to a foreign collective bargaining agreement will be allowed to maintain its salary and employment conditions, provided these are 'fair and in accordance with Greenlandic legislation'.

Local trade unions, employer's associations and NGOs are entitled to have access to the collective agreements.

The last version of the bill went through a couple of changes and has the following main elements (Eversheds 2013b):

The previous bill laid down a threshold for a project to qualify as 'large-scale' at DKK 1 billion. Now, however, the threshold has been increased to DKK 5 billion. Following this amendment, a project qualifies as 'large-scale' if:

- a) the expected value of the project exceeds DKK 5 billion, and
- b) the project's need for labour in carrying out construction activities exceeds the suitable, available and accessible workforce in Greenland, or

c) if the demand for technical or economic capacity of the companies performing the construction activities exceeds Greenlandic companies' capacity.

As for the terms of employment of foreign workers, the previous version of the bill suggested that 'foreign workers could legally be covered by a foreign collective bargaining agreement, as long as the salary and employment conditions were deemed "acceptable" and "objectively and reasonably justified"'. This proposal had been heavily criticised because it would promote social dumping, with foreign employers discriminating against foreign employees by paying them lower wages than would be paid to Greenlanders. Now the revision of the bill tightens the regulation on the minimum wage. The legal basis for non-fixed minimum hourly wages pursuant to foreign collective agreements has been removed from the act.

Although foreign collective agreements can still form the legal basis of employing foreign workers within the scope of the Large-scale Law, the wage floor has been fixed. As Eversheds puts it:

foreign collective agreements are now restricted from fixing wages lower than the minimum wage set forth by collective agreements of Greenlandic labour unions. This effectively removes the possibility of employing foreign labour below the minimum hourly wage that is currently fixed at DKK 80.41 pursuant to national collective agreements.

The Act still provides opportunities for foreign companies to use their own collective agreements as it does not regulate, for example, overtime payments or holidays.

The latest changes have somewhat increased the threshold for projects to qualify as 'large-scale' and have defined the minimum wage criterion more precisely. This means that there is a clear wage floor, but above that the way is free to undermine local labour conditions and standards.

One might ask whether Greenland needs such legislation at all? Investors would still queue up to launch projects regardless of such preferential treatment. Even if the act cannot be fully reversed at this stage (after its approval by the Greenlandic government), further modifications are necessary. The basic principle should be equal treatment of foreign and national workers. This should clearly be the case for overtime work, holidays and training. Health and safety provisions should have an eminent role; no opt-out from national regulations must be allowed. Moreover, supplementary legislation should be considered so that foreign investors maximise the recruitment of local labour, including training measures provided for their proper skilling.

Some forecasts (for example, WSJ 2013) reckon that workers from China could make up 10 per cent of the population of Greenland in the coming years. For this to happen, only two of the planned projects from the list need to be realised. If Alcoa and London Mining Plc realise their plans (see Box 4) and employ 3,000 Chinese workers each, that would make up more than one-tenth of the population of Greenland and more than 20 per cent of its labour force (see Box 4).

This will pose a huge challenge for Greenland.

7. Conclusions and policy recommendations

The priority of a greening economy is to produce (more) value at less material and resource input through higher resource productivity and efficiency, not chasing after more and more resources. This is easy to say, but in a context in which short-term economic gains for a small community are set against long-term losses for a larger community, there is no political-institutional solution that could represent the latter interest, even if the magnitude of future losses is much higher than the short-term gains.

The whole world is currently in the grip of short-term local interests. Examples from the United States and Canada clearly show this; the failure of the symbolic Yasuni initiative underlines the trend. In a number of cases in North America trade unions have come under pressure and have had to face serious challenges.

Greenland is unique. It is a pristine natural environment (like Alaska and Amazonia) and its natural resources have a critical effect on the environmental balance of the whole planet. Concerns about the integrity of natural resources in Greenland are not just about the local environment; it may be that the balance of the whole planet is at stake. This is a huge responsibility.

When drawing lessons and trying to formulate policy recommendations we apply a three-level approach, starting from the global perspective and then make recommendations based on current political and economic realities.

On the general level, a solution such as the 'Yasuni initiative' (which finally failed in Ecuador) could theoretically be considered for Greenland. Raising an international fund in order to pay compensation in exchange for a mining and drilling moratorium? If there is one place on Earth where a similar initiative to 'Yasuni' could work, it must be Greenland. In practical terms, this would mean that the current subsidy provided by Denmark was turned into an international initiative arranged through a global fund with the aim of providing a basic income for Greenland's population in exchange for a mining moratorium.

The feasibility of such a solution is minimal.

Realistically, resource extraction will undoubtedly start in Greenland and increase rapidly in the near future.

The practical conclusion, given Greenland's broader responsibility for the environmental balance of the planet and the specific features of the Arctic region, is that mining activity needs to be kept within limits. There is a critical mass that should not be exceeded. This means that not only do individual projects need to be monitored and evaluated but also their cumulative impact. In this regard the economic rationale – which, in any case, should be the welfare gains of the population and not the profits of multinationals – constitutes one side of the equation, while cumulative environmental impacts constitute the other. There should be a central monitoring institution that involves all stakeholders and also representatives of independent climate science that would control the expansion of the mining industry.

A series of practical and concrete measures on the level of individual projects also need to be taken so that they are conducted in a sustainable way, in both social and environmental terms. Some of the international initiatives and practices mentioned in this report can provide guidance and serve as a backbone for some of the following recommendations.

The first key issue is maximum transparency, in finances, environmental and social impact studies and standards. This is particularly important for Greenland, a country with a GDP of only USD 2 billion, which is the equivalent of the investment value of only one of the planned projects mentioned. There is a huge asymmetry between the power of multinationals and that of the Greenlandic government.

In order to implement maximum transparency, environmental and safety standards, Greenland should apply international norms and join international initiatives, such as the EITI (Extraction Industries Transparency Initiative), with its annual reporting obligation. In line with EITI recommendations trade unions and civil society need to be involved in decision-making on mining concessions, as well as in the monitoring process. One lesson drawn from international mining conflicts was that although environmental and social impact studies are often carried out they are not independent and not widely accessible. Such impact studies are crucial both in the initial phase of investment projects and in case of conflicts and need to be independent and challengeable. Issues to be covered by monitoring procedures include key environmental and safety standards concerning the contamination of soil, water and ice masses, as well as safeguards to prevent spills, leaks and accidents. The responsibility of investors in case of accidents needs to be clarified and recultivation obligations after extraction activities should be imposed.

The upcoming massive investment cycle will also pose an important labour and social challenge. This is indeed a turning point in the history of Greenland: the structure and composition of the country's resident population will be transformed fundamentally. Investment on such a scale can be achieved only by the large-scale mobilisation of foreign labour. It is already clear that a large number of the planned resource extraction projects will use foreign labour, in most cases Chinese workers. The major investment projects already being planned will require 9,000 foreign workers; currently, Greenland's total labour force is only 33,000.

The argument used by Chinese and other foreign investors to justify resort to foreign labour is similar to the one used in Canada: the operations are in an experimental phase and require special skills that are not available locally. Each case needs to be examined carefully, but labour legislation above all needs to be transparent and secure equal labour conditions for both foreign and domestic workers.

Preserving existing labour standards is a top priority and will need tight legislation, close involvement of trade unions at all levels and well developed monitoring institutions and instruments. The danger of foreign labour crowding out domestic labour is less than elsewhere, however, as Greenland does not have enough domestic labour, particularly with the relevant skills. However, investors should try to involve domestic labour as much as possible and also provide training for tasks that could be performed by local

workers. Mining concessions and investment approvals should be made conditional on maximising use of local labour.

One fundamental question is whether resource extraction investments need special treatment and preferences? Are the preferences foreseen by the 'Large-scale Act' necessary? Greenland has resources under the ice for which a ferocious race has started; such investors do not need incentives or preferences. What they need is strict regulation, transparency, high social and environmental standards and tight control.

Preferences such as those offered by the 'Large-scale Act' are normally used by low- and middle-income countries that are scarce in both natural resources and capital and are in competition for manufacturing investments and technology imports. Such investments with the jobs they create can come and go, but this is not true of resource extraction. Greenland has unique rare earth deposits; it simply does not need to give away concessions cheaply.

The law, even with its latest amendments, needs further revisions.

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