Poverty, Wealth and Ecology in Canada

A study for the
Alternative Globalization Addressing People and the Earth
(AGAPE) program of the World Council of Churches

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Abstract: Poverty persists in Canada amidst apparent wealth generated in particular by the petroleum and financial industries. Inequality in income distribution is increasing to the detriment not only of the impoverished but also the entire society. A booming petroleum extraction industry, centred on the Alberta tar sands, generates wealth for corporations but has harmful social consequences. Massive exploitation of the tar sands exacerbates ecological destruction and is incompatible with the urgent need to fight climate change. Financial industries in Canada also give rise to apparent wealth for some but do not deliver sustainable well-being for all members of society. Tax reform is needed to redistribute wealth and deter ecological destruction. The current trajectory of the world economy is socially and ecologically unsustainable. We must reorient the economy to live within the limits of the Earth's ecological carrying capacity.

Introduction

This study explores why increasing numbers of Canadians live in poverty while others amass large fortunes. In Canada, the petroleum extraction industry alone accounts for vast wealth accumulation at the cost of social inequality and grave ecological devastation. Likewise, financial services generate an unjustifiable accumulation of wealth at the expense of social equity. This study concentrates on these two industries.

Part One describes the reality of poverty in Canada in the midst of escalating inequality. The richest segment of the population captures an ever larger share of the wealth, marginalizing the impoverished and giving rise to negative consequences for the well-being of society as a whole.

Part Two examines the oil and gas extraction industry, centred in the Alberta tar sands, where substantial wealth accrues to the executives and shareholders of petroleum corporations while social conditions deteriorate, particularly for Indigenous peoples.

Part Three focuses on the ecological devastation caused by the extraction of bitumen from the tar sands. This destruction is particularly worrying in light of the threat that climate change poses to all life on Earth.

Part Four examines the financial services industry which also generates immense wealth. We examine how this industry benefits from low corporate taxes and tax exemptions. This section also describes how tax reform could raise revenue for fighting poverty and reducing greenhouse gas emissions.

Part Five moves beyond the need for incremental reforms, such as changes to the tax system, to the need to transform the global economy from limitless growth, with the destructive exploitation of natural wealth, to sustainably living within the limits of the Earth's ecological carrying capacity.

PART ONE: Poverty and Inequality in Canada

In a study prepared for the Latin American and Caribbean AGAPE consultation, Jorge Atilio Silva Iulianelli points out that dealing with poverty solely as income shortfall is inadequate on three levels. Although this approach is common with governments and multilateral agencies, it leads to treating people "exclusively as consumers who need a basic set of goods for their survival."[1] It dissociates poverty from inequality as though poverty were not the product of social relations. And it leaves aside human labour "as though people do not seek to meet their own needs through their own personal efforts."[2]

Whereas the dominant neoliberal discourse still maintains that a "trickle down" effect from economic growth is the best way to overcome poverty, the United Nations Research Institute for Social Development has shown that "high levels of inequality make it difficult to reduce poverty even when economies are growing. … Poverty and inequality are part of the same problem."[3]

This study examines poverty in Canada in terms both of low incomes and of growing inequality in the distribution of wealth. Inequality affects the most impoverished, but it also has detrimental

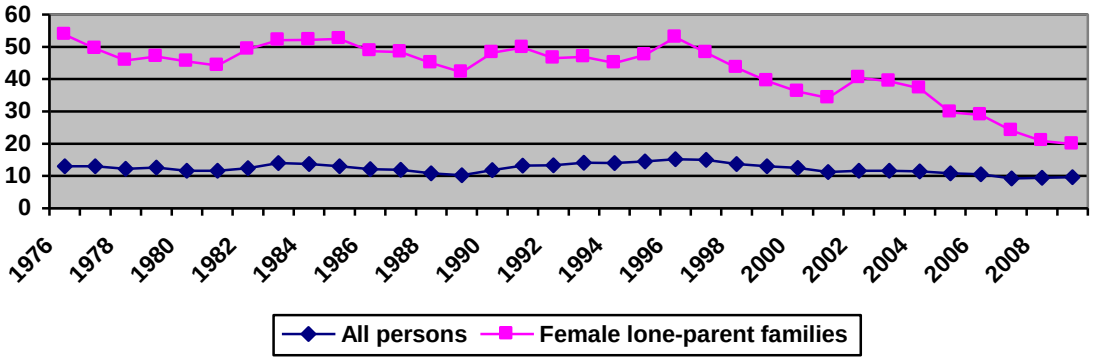
consequences for the whole of society. Our study emphasizes that for poverty to decline, inequality must also shrink. International studies show that societies with high rates of inequality are more tolerant of high rates of poverty.[4] Moreover a comprehensive approach to addressing poverty, inequality and ecological destruction must involve creating opportunities for marginalized people to be actively involved in the construction of a sustainable society.

Low-income measure of poverty in Canada

The most frequently cited measure of poverty in Canada is the Low Income Cut-Off (LICO) as calculated by Statistics Canada since 1976. The LICO incorporates both a measure of need and of relative inequality. Low Income Cut-Off lines "represent levels of income below which a family spends a larger share of its income for the necessities of food, shelter and clothing than the average family. This is defined by Statistics Canada to be 20 percentage points higher than that of the average family."[5]

When Statistics Canada first started calculating LICO in 1976, 13 percent of Canadians were deemed to be living below the poverty line. While this unofficial poverty rate has generally followed a downward trend, it spiked upwards during the recessions of the early 1980s and 1990s, peaking at 15.2 percent in 1996. By 2009, the latest year for which data are available, 9.6 percent of the population or some 3.2 million people were considered to be poor. However, the recession that began in October 2008 will likely increase instances of poverty. Economist Armine Yalnizyan calculates that "if past recessions are any guide, between 750,000 and 1.8 million more Canadians will be counted as poor before recovery is complete."[6]

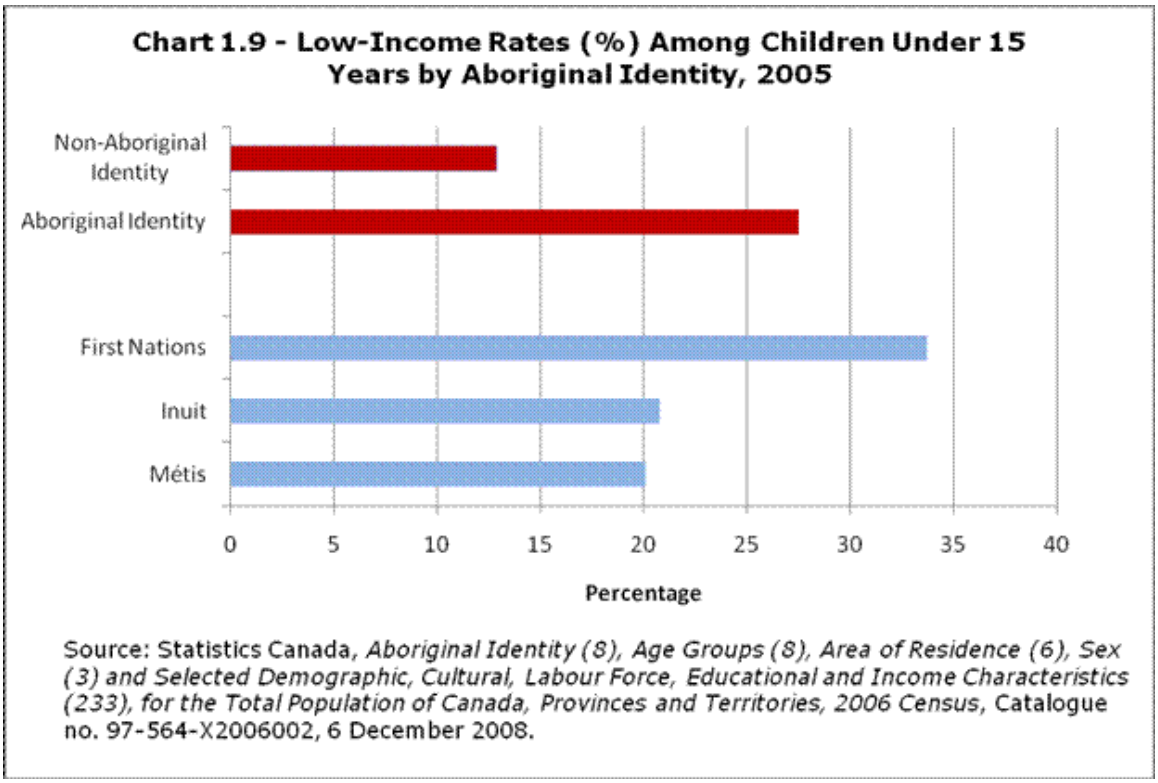
Percentage of Persons Living in Poverty in Canada 1976-2009[7]



Between 1976 and 2008, the poverty rate for women has been consistently higher than for men. More than half the lone-parent families led by women lived in poverty in 1976 and during the recessions of 1983-1984 and 1996. While this rate has come down, one in five mother-led, single parent families still lived in poverty in 2009.

In 1989 Canadian Members of Parliament unanimously voted to end child poverty by the year 2000. At that time , 11.9 percent of children lived in low-income households. By 2009 the child poverty rate had fallen only marginally to 9.5 percent, leaving 634,000 children impoverished.

Indigenous families[i] are more than twice as likely to live in poverty as other Canadian families. A 2006 study found that 49 percent of Indigenous children under six years of age living off reserves and 32 percent of young Métis children lived in low-income families. In 2005, the incidence of low income among Indigenous youth (16-24 years) was 63 percent among unattached youth and 19 percent among those in families.[8]



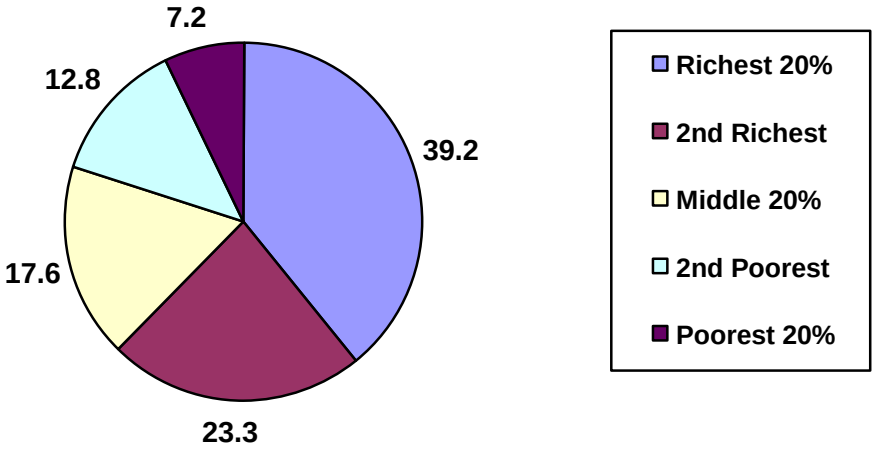
Inequality harms all of society

A recent study by Richard Wilkinson and Kate Pickett, *The Spirit Level: Why Equality is Better for Everyone,* describes how citizens of societies that have achieved a high degree of material wealth also experience rising levels of anxiety, depression and social problems.[9] They concur with studies showing that, at a certain point, amassing more and more material goods does not lead to increased happiness.

Wilkinson and Pickett measure inequality in a country by how much more income the richest 20 percent receive compared to that of the poorest 20 percent. In Canada, the richest fifth of Canadian earners take home 39.2 per cent of total income while the poorest quintile gets just 7.2 percent (see pie graph).

[i] The terms Indigenous and Aboriginal are used interchangeably to refer to the original peoples of North America. In Canada, these include three groups: the First Nations (formerly called "Indians" in colonial parlance), the Inuit who are the predominant group in the Northern territory of Nunavut and the Métis who are the descendents of French and Scottish fur traders and other early settlers and First Nations' women.

Shares of After-Tax Incomes in Canada 2009 by Quintiles
(percent of total)



Wilkinson and Pickett demonstrate that high levels of inequality in wealth distribution have negative consequences for many economic and social factors including life expectancy, health and educational performance. Their study shows that in supposedly affluent societies with wide gaps between the rich and the poor, the incidence of mental illness is three times higher and obesity rates are twice as high. There are eight times more prisoners and 10 times more teenage pregnancies.

Societies with high levels of inequality also have a higher use of illegal drugs, higher rates of infant mortality, more school dropouts, higher homicide rates and more health problems.

The riots and looting that rocked London and several other British cities in the summer of 2011 were seen by many as a stark reminder of the consequences of the social alienation of marginalized groups who see limited opportunities for themselves in unequal societies.[10]

Wilkinson and Pickett assert that more economic growth will not improve the quality of life for citizens of affluent countries, although it is still needed in developing countries to allow people to achieve an acceptable level of well-being. In more affluent countries, "To gain further improvements in the real quality of life we need to shift attention from material standards and economic growth to ways of improving the psychological and social wellbeing of whole societies."[11]

Inequality a root cause of the global crisis

Branco Milanovic, a leading economist at the World Bank, traces the roots of the global economic crisis of 2008 to rising income inequalities throughout the world, particularly in the United States. There the richest one percent of the population doubled its share of national income between the 1970s and the early 2000s. The widening gap affected, in quite different ways, the behaviour of those at the top of the income scale and those whose real income was shrinking .

The very rich turned to financial institutions to invest their substantial surplus wealth. As Milanovic describes it: "Overwhelmed with such an amount of funds, and short of good opportunities to invest the capital as well as enticed by large fees attending each transaction, the financial sector became more and more reckless, basically throwing money at anyone who would take it."[12]

As real median wages in the US had stagnated for 25 years, middle- and low-income earners were encouraged to borrow more by using credit cards, taking out car loans or applying for low-cost mortgages. While the financial institutions that peddled subprime mortgages (later packaged into exotic new financial instruments and sold around the world) must be held accountable for the financial crisis, Milanovic reveals its deeper roots. He sums up his analysis by noting: "The real cause of the crisis lies in huge inequalities in income distribution which generated much larger investable funds than could be profitably employed."[13]

At the same time, the problem of stagnant or falling income for middle- and lower-income earners was temporarily solved by offering them cheap credit. However, "The consumption binge [that] took the edge off class conflict and maintained the American dream of a rising tide that lifts all the boats … was not sustainable. Once the middle class began defaulting on its debts, it collapsed."[14]

Rising inequality in Canada

A study by economist Armine Yalnizyan, *The Rise of Canada's Richest 1%,* reveals that the 246,000 privileged few with average incomes of $405,000[ii] – held 13.8 percent of all income earned in 2007. The share of total income held by the wealthiest one percent almost doubled between 1977 and 2007. Moreover, the income share of the richest 0.1 percent almost tripled over the same period, while the share captured by the wealthiest 0.01 percent more than quintupled.[15]

Growing income disparities in Canada have even caught the attention of the corporate-sponsored Conference Board of Canada. In July 2011, it issued a report on how income inequality has grown over the last 20 years. According to the Conference Board, between 1993 and 2008 the richest Canadians increased their share of total income at the expense of both the poorest and middle-income Canadians.[16]

The extraordinary rise in the concentration of income reverses a trend that began during the Second World War that saw the share of Canadians' income held by the richest one percent decline from 14 to 7.7 percent in 1977.[17] Rising annual income disparities inevitably lead to greater concentration in wealth, understood as a person's or a family's net worth (i.e., their assets minus their liabilities). By the end of 2009, the richest 3.8 percent of Canadian households controlled $1.78 trillion of financial wealth or 66.6 percent of the total, up from 60.6 percent in 2005.[18] Their share of total wealth is projected to rise to 70 percent by 2018.[19]

[ii] Dollar figures cited in this study are in Canadian dollars unless otherwise indicated. Recently the Canadian dollar has traded at between 94 US cents and US$1.05.

Changes in income tax rates partially account for this trend. Whereas the top marginal tax rate, including both provincial and federal taxes, was 80 percent in 1948, it fell to an average of only 42.9 percent in 2009. Between 1990 and 2005 the wealthiest one percent saw their taxes cut twice as much as the taxes paid by average Canadians. As a result, by 2005 the richest one percent were taxed at a slightly lower rate than the poorest 10 percent.

This decline in progressive tax rates is only one aspect of the neoliberal assault on social rights that swept through Canada during the last two decades of the 20th century. Prior to the 1980s, Canadian governments had instituted a wide range of egalitarian social policies including government pensions, universal health care and comprehensive unemployment insurance.

However an ideological shift occurred in the 1980s, reflecting the Thatcher and Reagan revolutions. Universal social programs began to be eroded and there was a shift towards a means-tested charity model involving reluctant handouts to the "deserving" poor. Prior to the signing of the Free Trade Agreement (FTA) with the U.S. in 1988, Canada's business elite urged governments to harmonize social programs with the generally lower benefit levels prevailing in the United States.

As early as 1980, a leading businessman told a Senate committee: "It is a simple fact that, as we ask our industries to compete toe to toe with American industry … we in Canada are obviously forced to create the same conditions in Canada that exist in the U.S., whether it is the unemployment insurance scheme, Workmen's [*sic*] Compensation, the cost of government, the level of taxation, whatever."[20]

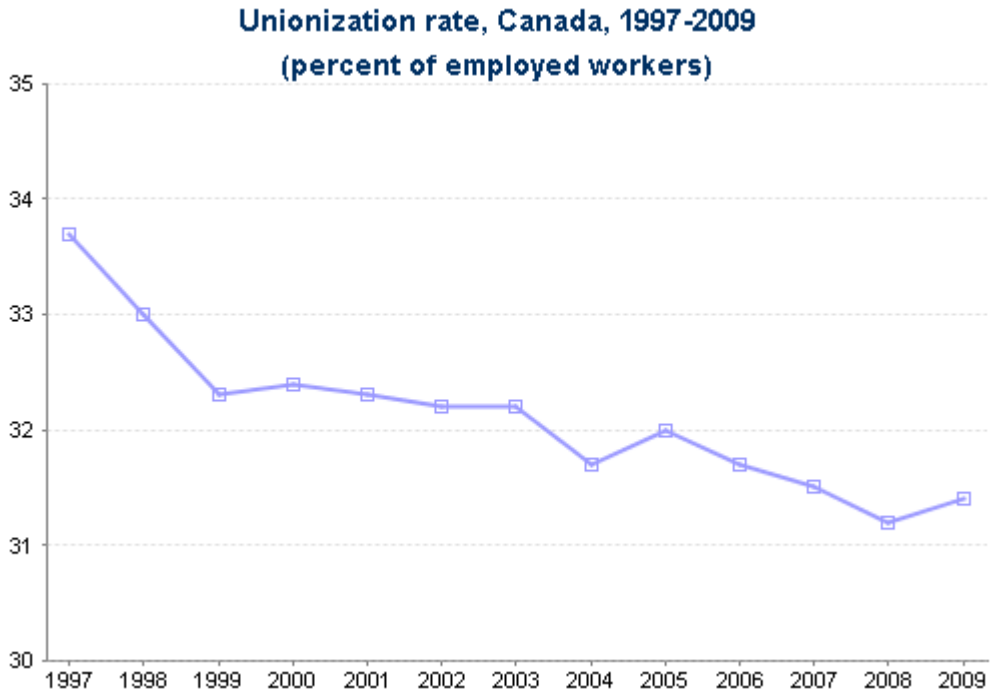
Indeed, in April 1989, the first federal budget after the implementation of the Canada-US FTA initiated cuts to Unemployment Insurance, Old Age Security and federal transfers to provinces for health care and education. The clearest example of downward harmonization is what happened to unemployment insurance. In 1989, 89 percent of unemployed Canadians qualified for insurance (compared to 52 percent in the US); by 2001, only 39 percent could collect benefits.

This pattern of pressures to lower benefit levels and cut social spending accelerated after 1994 when Mexico was admitted into the North American Free Trade Agreement (NAFTA). John W. Foster describes how the "NAFTA model" of enhanced competition that kept wages low while boosting opportunities for cross-border investments had grave social consequences. He states: "In the USA, the wealthiest 1% increased their share of total income in 1990-99 from 12.5% to 17.8%. Canadian figures demonstrate that between1989 and 2005 the income of the lowest quintile of all family units declined by 11% while the top quintile's share of total Canadian income increased by 16%, to 46.9%. In summary, 80% of Canadian families experienced a stagnation or fall in their income during [the free trade era]."[21]

The decline in the family incomes of the lowest-paid four-fifths of Canadians over this period is partly due to competition with low-wage labour in the Southern U.S., Mexico and Asian countries. It is also due to policies of "labour flexibility" introduced to weaken the bargaining power of trade unions. Workers who lost unionized jobs in manufacturing industries frequently had to settle for lower-paying temporary or part-time work without union protection. Wilkinson

and Pickett recount how a "study which analyzed trends in inequality during the 1980s and 1990s in Australia, Canada, Germany, Japan, Sweden, the United Kingdom and the United States, found the most important single factor was trade union membership."[22]

Membership in trade unions in Canada has been in decline since the beginning of the neoliberal era in early 1980s when unions represented over 37 percent of the labour force. The percentage of Canadian workers belonging to trade unions fell from 33.7 percent in 1997 to 31.4 percent in 2009 (see graph).

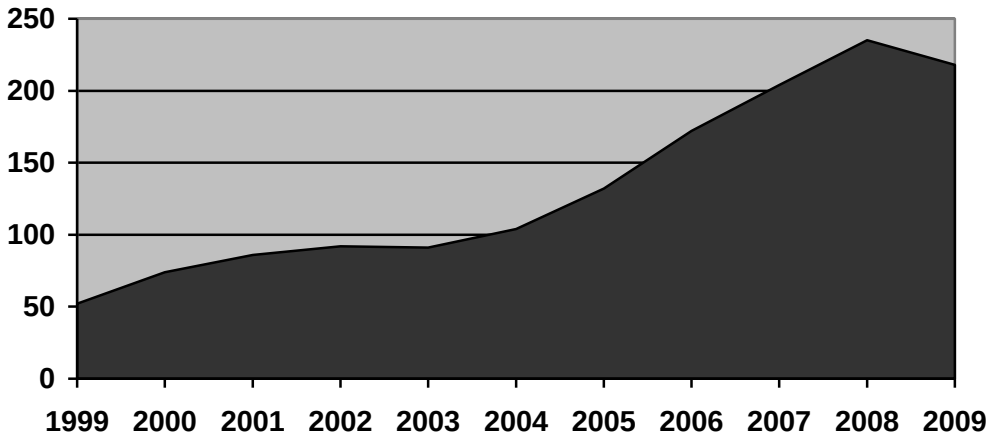


Source: Strategic Policy, Analysis, and Workplace Information Directorate, Labour Program, Human Resources and Skills Development Canada.

PART TWO: Petroleum Wealth and Social Inequality

The oil and gas industries play a significant role in wealth creation in Canada. Equity investment in the oil and gas extraction industry quadrupled between 1999 and 2009 when it was valued at $218 billion (see chart). The Canadian Energy Research Institute projects that $2.077 trillion will be invested in building and maintaining Canada's tar sands operations over the next 25 years.[23] Significant investments in hydrocarbon extraction are also proposed for offshore oil wells in the Atlantic near Newfoundland and natural gas wells near Nova Scotia, as well as in the Mackenzie Delta and the Beaufort Sea.

Equity in Oil and Gas Extraction and Support Activities
$ billions



Source: Statistics Canada CANSIM Table 180-0003

Petroleum industry profits have grown substantially in recent years, tracking the rise in world oil prices. Between 2000 and 2009, oil sold at an average price of US$51 a barrel, over two and a half times as much as its price during the previous decade.[iii] During the same years, the petroleum industry in Canada accounted for 11.6 percent of all industry profits, more than two and a half times its share from 1990 to 1999.[24]

An energy superpower?

Prime Minister Stephen Harper boasts that Canada has become "an energy superpower" with "an ocean of oil-soaked sand" under the boreal forest of Northern Alberta.[25] The basis of the Prime Minister's claim is the existence of massive deposits of bitumen, an ultra-heavy, viscous hydrocarbon.

The heavy black sand containing bitumen can be extracted from large open pit mines and washed with hot water and detergent. The water containing heavy metals and other contaminants is then stored in huge tailing ponds. Alternatively, *in situ* wells use high pressure steam to loosen the

[iii] The oil price cited here is for West Texas Intermediate spot price delivered at Cushing Oklahoma as reported by *BP Statistical Review of World Energy 2010*, p.16. This is the most relevant international benchmark price for the Canadian industry since two-thirds of Canadian oil production is exported to the United States.

bitumen from the sand underground. Once extracted, bitumen must be upgraded into synthetic crude through an infusion of hydrogen derived from natural gas in order to be refined into gasoline and other products. Synthetic crude has a higher sulphur, acid and heavy metal content than conventional oil.

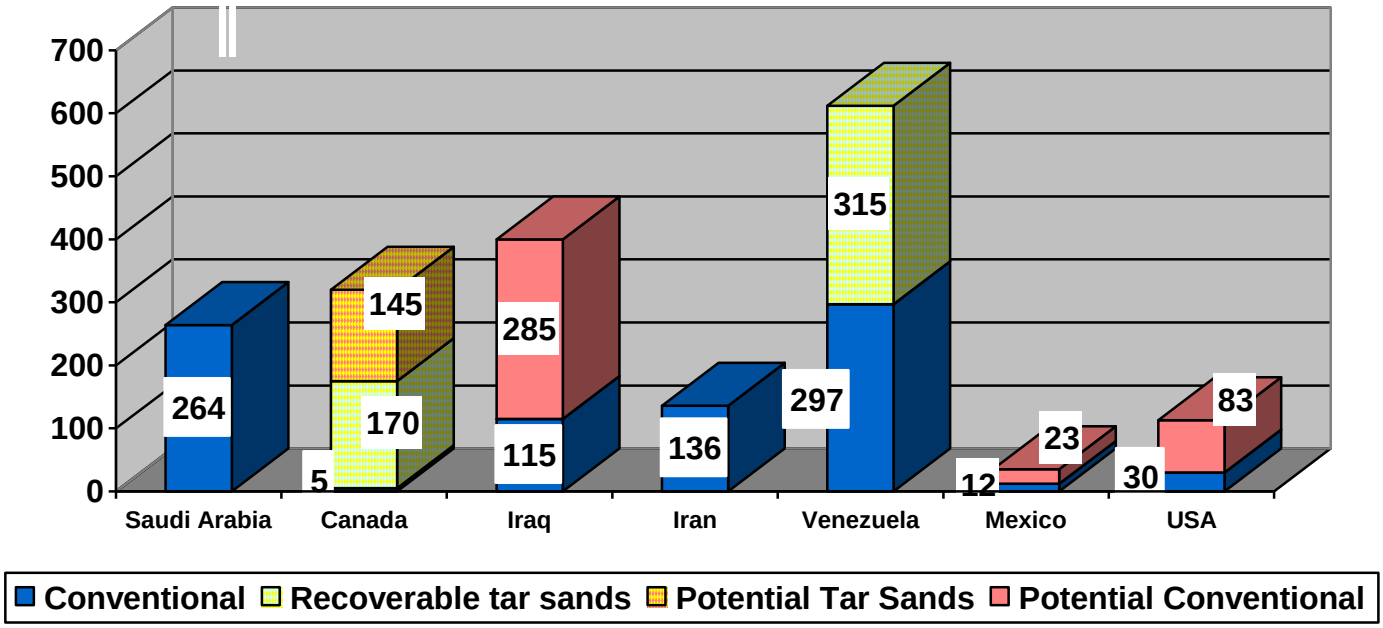
Of the 1.8 trillion barrels of bitumen estimated to lie underground in Northern Alberta, 170 billion barrels could be extracted at current prices using current technologies (in addition to the seven billion barrels that have already been produced). The ultimate potentially extractable amount, pending technological developments, is estimated at about 315 billion barrels.[26]

Canada has only about five billion barrels of conventional crude reserves remaining, much of which is located offshore in the Atlantic, east of Newfoundland. But when the 170 billion barrels of extractable tar sands reserves are added, the petroleum industry claims that Canada has the second highest oil reserves in the world, after Saudi Arabia. If the ultimate potential of 315 billion barrels became feasible to extract, Canada could add another 145 billion barrels to its tar sands reserves and rank ahead of Saudi Arabia.

Canada could still rank behind Iraq, whose full potential has yet to be explored, and Venezuela. The US Energy Information Administration estimates that Iraqi oil reserves, once totally explored, could exceed 400 billion barrels.[27] According to OPEC's Statistical Bulletin, Venezuela's reserves now exceed those of Saudi Arabia. In addition, Venezuela has bitumen deposits similar to the Alberta tar sands that could contain an additional 315 billion barrels of recoverable crude.[28]

Oil Reserves and Potential[29]

Billions of Barrels



The scale of planned tar sands expansion is enormous. In 2010, tar sands corporations in Canada produced about 1.5 million barrels of synthetic crude a day, while their total production capacity reached 1.9 million barrels a day. Projects capable of producing an additional 2.2 million barrels a day are under construction or approved for development. Furthermore, the industry plans to seek approval for projects that would produce a further four million barrels each day. If all these projects are built, total capacity will rise to over eight million barrels a day.[30]

The Canadian Association of Petroleum Producers (CAPP) asserts that investments in the tar sands are expected to cause the Canadian economy to grow by "over $1.7 trillion dollars over the next 25 years."[31] CAPP notes that this is larger than Canada's 2009 GDP of $1.5 trillion. According to CAPP, this tar-sands induced growth is expected to generate more than 590,000 direct and indirect jobs in Canada over the next 25 years.[32] CAPP says that 103,000 of these jobs will be located in provinces other than Alberta as components such as tires, trucks, gauges, valves and pumps would be manufactured in central Canada.

However in a study for the Alberta-based Pembina Institute, Clare Demerse points out: "Not all of the materials and equipment used for oil and gas production are manufactured in Canada. For example, in the oil sands sector, 11% of projected GDP growth, and 17% of the project employment created by oil sands activities in the 2000-2020 time period, is projected to occur outside of Canada."[33]

Moreover, oil and gas extraction is the most capital intensive of all Canadian industries, yielding fewer jobs per dollar invested than any other industry. Investing in energy conservation and renewable energy production creates about three times as many jobs as investment in oil production.[34]

Social impact

Alberta author Andrew Nikiforuk calls Canada a "petro-state" that has embarked on an unsustainable trajectory burdened by what is commonly referred to as "the resource curse."[35] While the term "resource curse" is more commonly applied to oil exporting developing countries such as Nigeria, there are indeed many Canadian parallels. Countries burdened by the resource curse are prone to high levels of income inequality and widespread ecological damage with harmful consequences for Indigenous populations.[36]

A 2007 study by Diana Gibson, a researcher at the Edmonton-based Parkland Institute, reports that about half of the wealth generated by the oil companies flows out of Canada to foreign shareholders. Of the wealth that remains in Alberta, most goes to the richest 10 percent of families. Those with middle incomes see only nominal income growth, attributable in large part to working longer hours. Most significantly, low-income people have seen a dramatic reduction in their purchasing power.

In *The Spoils of the Boom*, Gibson concludes: "The benefits of Alberta's boom are trickling up to corporations and Alberta's wealthy and high income earners. … Much of the economic growth is going to corporate profits, increases for corporate executives and dividends to shareholders, mostly foreign …[since] close to half of the assets and over half of the revenue in oil and gas extraction in Canada are foreign-owned."[37]

Rapid expansion of the tar sands puts increasing pressure on the housing market. Rents have increased beyond the ability of low-income people to pay, causing a crisis in homelessness. The number of homeless people in Calgary grew from 447 in 1992 to 3,436 in 2008. A discussion paper prepared for the Alberta College of Social Workers notes: "At the height of the boom (between 2006 and 2008) homelessness increased by 458 percent in Calgary and 151 percent in Edmonton."[38]

The paper notes that "lone parents, Aboriginal families and newcomers in Alberta live in deeper and a more persistent state of poverty than in any other province in Canada."[39] As social assistance has failed to keep up with inflation, 64 percent of single-parent families headed by women and 54 percent of Aboriginals live in poverty.[40]

Other worrisome trends in the report[41] include:

- Food bank usage rose 45 percent between 1997 and 2009.
- Alberta has the highest rates of family violence in the country.
- Albertans rank lowest in Canada for their sense of belonging to their community.
- Alberta has the lowest participation in university education.
- Albertans have by far the lowest leisure time in the nation.
- Increasingly, jobs have become temporary or part-time or self-employment while average wages have barely kept up with inflation.

Past tar sands expansion booms have led to temporary labour shortages. In order to overcome them, the federal government devised programs to bring in temporary workers from countries such as Mexico, China and the Philippines.

As a 2008 KAIROS discussion paper noted: "The problems associated with importing workers from abroad are familiar: unscrupulous recruiting agencies charging exorbitant fees, sub-standard living conditions, threat of deportation and lack of support for people who often do not understand their rights under these programs and have difficulty communicating their needs, given language and cultural barriers. Temporary workers have no access to [settlement] services and no guarantees of how long the work will last. When the work runs out, some enter the underground work economy where they are even more vulnerable to abuse. The Alberta Federation of Labour has investigated numerous cases of abuse and identified loopholes that often leave temporary workers with few earnings. 'If you are an employer and you can hire a worker where you can get half of the wages back on rent, that's a bonus … . They find these ways to nickel and dime them. There are guys that come here, work here for six months, then go home without having earned a penny.'"[42]

Economic costs: the Dutch Disease

One effect of exporting most of the synthetic crude (1.3 million out of the daily production of 1.5 million barrels) to the United States is upward pressure on the value of the Canadian dollar. Thus Canada is experiencing a version of the Dutch Disease, named after what happened in the Netherlands when natural gas exports inflated the value of the guilder, leading to a loss of manufacturing jobs. The surge of foreign investment into tar sands only compounds the problem as foreign currency is exchanged for Canadian dollars, bidding up the value of the "Loonie," as

our dollar is popularly known. Since 2002, over 400,000 Canadian manufacturing jobs have been lost. One study concluded that 54 percent of job losses in manufacturing between 2002 and 2007 were due to rapid development of the tar sands.[43]

Indigenous peoples

Nearly all the land on which tar sands extraction occurs is Indigenous peoples' territory. Downstream from Fort McMurray, the Athabasca Chipewyan, Mikisew Cree, and Métis peoples who live in and around the small community of Fort Chipewyan have protested against the contamination of their waters and loss of traditional livelihoods. A report prepared in 2005 by a consultant for Suncor, a tar sands operator, warned that arsenic in moose meat, a staple in Indigenous peoples' diet, could reach 453 times the level of acceptable risk.[44]

Fort Chipewyan is near the delta where the Athabasca river flows into Lake Athabasca. To the southwest live the Lubicon Cree First Nation who, along with several other Indigenous nations, are resisting the building of the Northern Gateway Pipeline that would take crude oil from the tar sands to the west coast of British Columbia for export to the U.S. or China. Farther north, members of the Dehcho First Nations are concerned about the contamination that could flow north from Lake Athabasca and down the Mackenzie river to the Beaufort Sea.

A study conducted on behalf of Fort Chipewyan's Health Board found that 30 to 40 percent of walleye fish in the lower Athabasca river had levels of mercury that exceeded those deemed safe for human consumption.[45] Dr. John O'Conner, who served Indigenous communities along the Athabasca River for many years, documented five cases of bile duct cancer in Fort Chipewyan, a rare illness that normally strikes only one in 100,000. A report by the Alberta Cancer Board found that over the last 12 years cancer rates in Fort Chipewyan were 30 percent higher than the expected rates.[46]

The people of Fort Chipewyan are asking for independent scientific studies to evaluate the cumulative ecological impacts on the land, water, animals and fish that they depend on for sustenance and for the preservation of their culture, language and way of life.

A 2009 KAIROS delegation composed of Canadian church leaders and partners from the global South reported on how Indigenous people are torn between wanting to derive some economic benefits from the tar sands while fearing for their health and their way of life:

We stayed in Fort Chipewyan, meeting with members of the Mikisew Cree First Nation, Athabasca Chipewyan Cree First Nation and the Métis. Some spoke of the economic benefits of the tar sands, of not wanting to damage that economy. Some mentioned receiving compensation for the use of their traditional territories. Companies owned by Indigenous peoples contract services to the tar sands sector.

Yet we also heard that their way of life, as fishers, hunters and trappers, is being negatively affected, as well as the health of water and land. We heard that their concerns about the impacts of the tar sands developments have been largely ignored, how Treaty and Indigenous rights have not been respected, and of the need for greater involvement of Indigenous communities in tar sands planning.

In Fort Chipewyan, people told us of rare illnesses, the growing number of deaths from cancer and frightening changes to local ecology. We saw how rapidly the graveyard is filling up. People in Fort Chipewyan need answers about why this is happening and how it can be prevented.[47]

Tar sands heavily subsidized

The tar sands industry could not have emerged in Canada without extensive assistance from the federal and Alberta governments. Governments heavily subsidized research and development of technologies for the separation of bitumen from sand and its upgrading into synthetic crude. Between 1996 and 2002, federal subsidies amounted to $1.2 billion. The 2007 federal budget announced a plan to phase out one of the largest subsidies, an Accelerated Capital Cost Allowance for tar sands investors worth $300 million a year. But the phase out will take place very slowly – the program will not end until 2015. The implicit message to investors was to get their shovels into the ground quickly so as to be eligible for the subsidies (worth almost a million dollars a day) before the program is eliminated.

Tar sands operators enjoy another hidden subsidy. They are allowed to deduct part of the cost of the natural gas they use to extract and upgrade bitumen from the royalties they owe to the Alberta government and from their provincial and federal corporate taxes. In 2010 these deductions reduced by half their costs for natural gas.[48]

Corporations capture resource rents

Although federal government subsidies have played an important role, a much more important incentive to tar sands expansion is the failure of the provincial government, as custodian of a resource that belong to the people of Alberta, to collect adequate royalties from petroleum companies. A Parkland Institute study found that between 1999 and 2008 the provincial government allowed conventional oil and gas corporations to collect $121 billion worth of "excess profits" because royalty rates were so low. Similarly, between 1997 and 2008, tar sands companies earned between $97 billion and $127 billion in pre-tax profits, of which 80 to 90 percent were in excess of a normal rate of return.

The Parkland study's calculations of "excess profits" are based on the failure of the Alberta government to capture the economic rents accruing to the petroleum companies. Economic rent is defined as the surplus accruing after allowing for production costs and a normal rate of profit, assumed to be a 10 percent return on investment. Over the decade beginning in 1999, royalties and income from land sales collected by the Alberta government captured on average just 47.4 percent of the rents generated by the sale of conventional oil and gas.

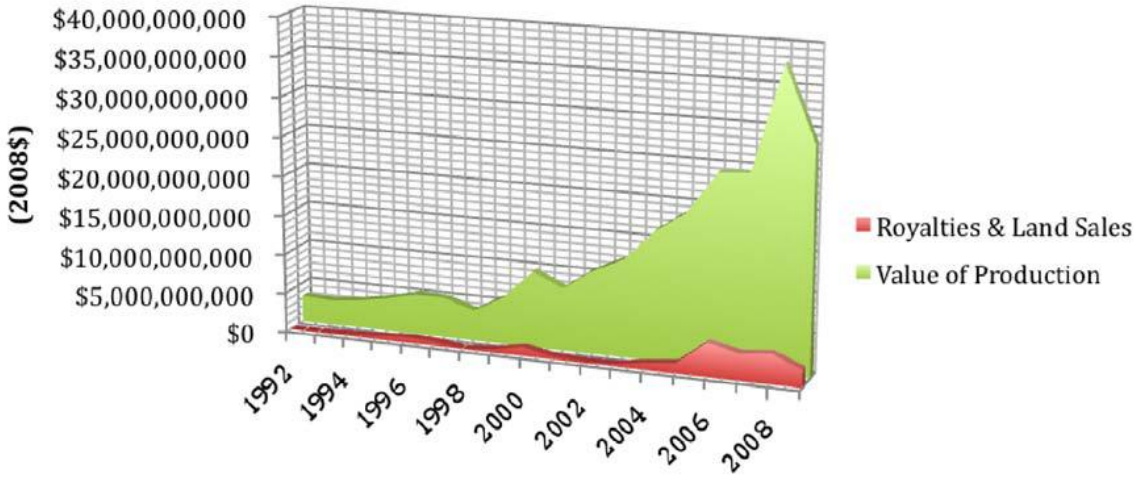
In the case of the tar sands, the average share of rent collected by the provincial government was even lower. It ranged between 8.9 and 14.6 percent in the decade after 1997. Put another way, the Alberta government collected just $19.3 billion in income through royalties and land sales from the $205.5 billion that corporations earned by exploiting the tar sands.

Rent collection is low because tar sands operators pay negligible royalties until they have recovered all the capital costs involved in building and running their projects. As Regan

Boychuk explains: "Put simply, tar sands operations are given virtually royalty-free oil to cover all of the costs of constructing and operating these enormous projects. In effect, these projects are built and run through a transfer of public wealth."[49]

When world oil prices were just over half as high as they were in the first half of 2011, Alberta author Andrew Nikiforuk observed that, "Alberta's share from a $60 barrel of oil is a mere 30 cents, one of the lowest royalties in the world."[50] When oil traded for over US$100 a barrel during the first quarter of 2011, profit margins for tar sands companies were reported to be as high as 20 to 30 percent.[51]

Value of Tar Sands Production versus Royalties and Land Sales



Source: Regan Boychuk. *Misplaced Generosity: Extraordinary profits in Alberta's oil and gas industry.* Edmonton: Parkland Institute. Used with permission.

PART THREE: Oil Wealth and Ecological Devastation

The ecological destruction wrought by the extraction of bitumen from the tar sands begins with the removal of boreal forest. While 686 square kilometres of boreal forest have been removed so far to enable mining of the tar sands, the total could rise to 4,800 square kilometres if mining operations are allowed to expand.

Where bitumen is extracted through the injection of steam into deeper sand formations, the construction of roads and clearing of well sites also disrupts the habitat for caribou, moose and other animals on which Indigenous people depend for sustenance.

Scientists predict that the woodland caribou herd could disappear from the north east of Alberta. Chief Janvier of the Chipewyan Prairie Dene First Nation laments: "The extinction of caribou would mean the extinction of our people. The caribou is our sacred animal; it is a measure of our way of life. When the caribou are dying, the land is dying."[52]

Removal of boreal forest also impacts climate change by eliminating the forest's capacity to act as a carbon sink.

The extraction of bitumen and its upgrading into synthetic fuel ready for refining emit 3.2 to 4.5 times more greenhouse gas (GHG) than conventional oil extraction. The Canadian Association of Petroleum Producers claims that in the United States, on a full-life cycle basis (i.e., from wellhead to tailpipe), fuel refined from synthetic crude results in only six percent more carbon dioxide emissions than fuels refined from other sources of crude.[53] However, U.S. government agencies give much higher estimates.

A letter sent by the U.S. Environmental Protection Agency to the State Department concerning the Environmental Impact Statement for the Keystone XL pipeline states: "We estimate that GHG emissions from the Canadian oil sands crude would be approximately 82 per cent greater than the average crude refined in the U.S. on a well-to-tank basis."[54] Moreover, Andrew Nikiforuk reports that, "The US National Technology Laboratory has calculated that jet fuel made from bitumen has a carbon footprint 244 percent greater than fuel made from U.S. domestic crude."[55]

It takes between 2.5 and 4.5 barrels of water to extract one barrel of synthetic crude. Although the companies reuse some water, much of the water used in mining operations ends up as toxic waste in huge tailing ponds that cover 170 square kilometres and are visible from space. The original belief was that the sediment would settle to the bottom of these lakes in a few years but geologists now estimate that it will take anywhere from 500 to 1,000 years for this to happen. Even then, there are no clear plans for what to do with the toxic sediments that will remain.

Similarly, while water used for steam injection is reused, it is still lost as a resource for consumption. The Council of Canadian Academies, an independent scientific advisory group asked by the federal government for advice on groundwater management, reported that, "Knowledge is lacking as to whether the aquifers in the Athabasca … region can sustain these groundwater demands and losses."[56]

The tailing ponds created by tar sands mining are now leaking 11 million litres of contaminated water every day or four billion litres per year.[57] Some is known to be seeping into the Athabaska River. A study by Erin Kelly and David Schindler from the University of Alberta found high levels of cadmium, copper, lead, mercury, nickel, silver and zinc downstream from the tailing ponds that exceeded federal and provincial guidelines for aquatic life.[58] Indigenous people living in Fort Chipewyan on Lake Athabaska note that six to seven percent of the fish they catch have deformities and high levels of mercury which they attribute to pollution from the tar sands. They are asking for independent studies of the cumulative impacts on the ecosystem they depend on for sustenance.

Tar sands and climate change

Climate change threatens to decimate life on Earth. Global temperatures have already risen 0.78 degrees Celsius above pre-industrial levels and 300,000 people die each year from climate change-related droughts, floods and extreme weather events.[59]

In order to prevent further catastrophe, global average temperature increases must be kept as far as possible below 2 degrees Celsius. An analysis by the United Nations Environment Program of the voluntary greenhouse gas emission reductions promised by developed countries under the 2009 Copenhagen Accord shows that in a best case scenario, in which countries implement their higher pledges and are subject to strict accounting rules, the world will still experience an increase in global temperatures of 2.5 degrees Celsius.[60]

On the other hand, in a worst case scenario, where countries implement lower pledges and apply lenient accounting rules, the increase would be five degrees Celsius. Another analysis by the Sustainability Institute, a U.S. non-profit organization, together with the MIT Sloan School of Management and Ventana Systems, calculates that the voluntary pledges made in the Copenhagen Accord would allow global temperatures to increase by approximately 3.9 degrees Celsius.[61]

Scientists say a four- to five-degree increase would be extremely dangerous:

- up to 3.2 billion people would lack sufficient water;[62]
- up to one-fifth of humanity would be affected by coastal flooding and extreme rainfall;[63]
- 21 to 52 percent of the world's plant and animal species would face extinction;[64]
- agricultural yields in Africa would decline by 15 to 35 percent;[65]
- glaciers in the Rockies, Andes and Himalayas would disappear, drying up rivers that hundreds of millions depend on for survival;[66]
- the Greenland and West Antarctic ice sheets could collapse, raising sea levels by several meters.[67]

Climate change may become irreversible if we fail to reduce our carbon emissions beyond the voluntary targets set in Copenhagen in 2009 (and reiterated one year later at the UN climate conference in Cancún, Mexico). As Arctic temperatures rise faster than the global average, melting permafrost would release billions of tonnes of methane, a greenhouse gas that is 25 times more potent than carbon dioxide over a 100-year period. This could bode disaster for all human and non-human life on Earth.

When Canada ratified the 1997 Kyoto Protocol, it committed to reduce Canada's greenhouse gas emissions to **six percent below** 1990 levels, on average, between 2008 and 2012. By 2008 Canadian emissions were **24 percent above their 1990 levels.** After the Copenhagen conference, Canada set a new reduction target of 17 percent below 2005 levels by 2020. If this goal were achieved, 2020 emission levels would still be **2.5 percent above 1990 levels**.

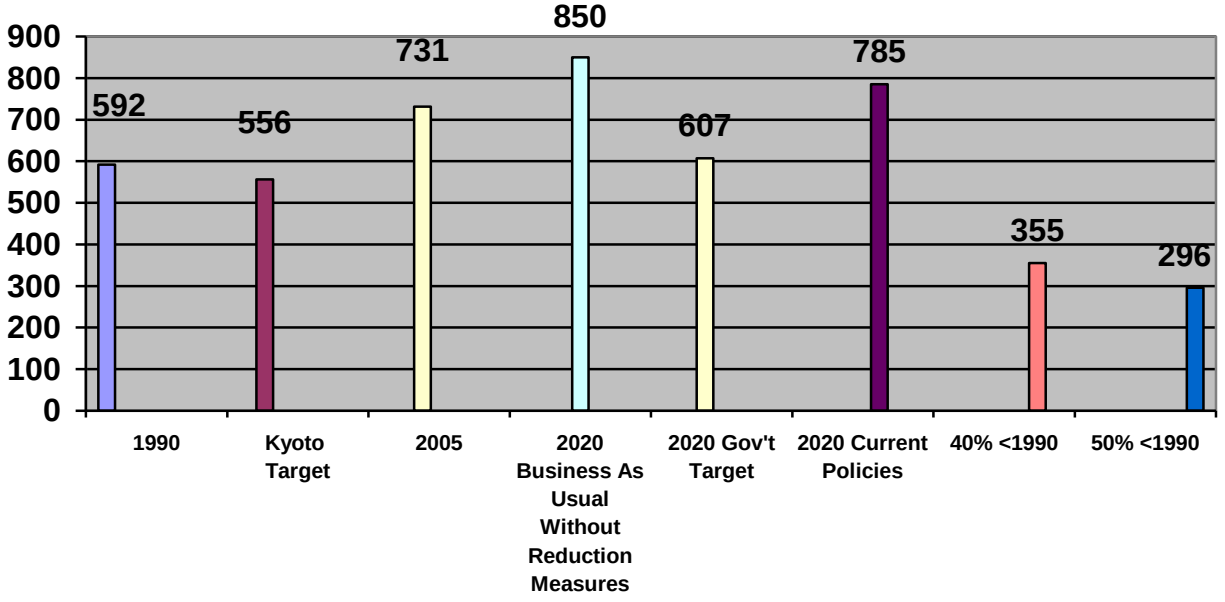
The following chart shows the challenge we face. Canadian greenhouse gas emissions under a business as usual scenario are projected by Environment Canada to reach 850 million metric tonnes (or megatonnes = Mt) of carbon dioxide equivalent by 2020. Meeting Canada's official emissions reduction target would involve reducing 2005 levels (731 Mt) by 17 percent (to 607 Mt) by 2020. Environment Canada projects that current policies are likely to reduce emissions to only 785 Mt by 2020 leaving a gap of 178 Mt unless there are further emission reduction initiatives.[68]

If we are to have any hope of keeping global temperature increases below two degrees Celsius, industrial counties' emissions must be reduced by 40 to 50 percent below 1990 levels by 2020. To meet a 40 percent target, Canada would have to reduce emissions to 355 Mt (or 296 Mt to achieve a 50 percent target). Hence the emission reduction gap that must be overcome through new initiatives is actually 430 to 489 Mt and not just the 178 Mt gap suggested by Environment Canada.

Canadian Greenhouse Gas Emission Targets

Megatonnes of CO_2e

Source: Environment Canada data



It will be virtually impossible for Canada to reduce greenhouse gas emissions by the required amount if tar sands production is allowed to expand. As noted, extracting synthetic fuel from the tar sands generates 3.2 to 4.5 times as much greenhouse gas as conventional oil extraction.[69] The tar sands are the fastest growing source of Canadian greenhouse gas emissions. They are

projected to grow by 62 Mt between 2005 and 2020 which would eliminate almost all the 65 Mt in reductions that would be achieved through government measures by the same date.[70]

Climatologist James Hansen maintains that to reduce greenhouse gas emissions sufficiently to keep temperature increases below two degrees Celsius we must phase out the use of coal and avoid any further exploitation of unconventional fossil fuels, including the tar sands. He warns that the release of the massive amounts of carbon contained in the tar sands would push us past a tipping where a runaway greenhouse effect endangering all life on Earth would be inevitable.[71]

By exploiting the tar sands, Canada is ignoring the imperative to reduce atmospheric concentrations from their current 391 parts per million (ppm) to 350 ppm or less. Hansen warns, "Fully exploiting the tar sands will make it impossible to stabilize the climate."[72] The approximately 1.7 trillion barrels of oil in the Canadian tar sands contain sufficient carbon to raise atmospheric carbon dioxide concentrations by about 150 ppm.

If the 315 billion barrels of oil deemed to be eventually recoverable from the tar sands were all produced, their combustion would increase global carbon concentrations by around 30 ppm. The seven billion barrels produced to date have already raised global CO_2 concentrations by about 0.7 ppm. If expansion plans are allowed to go forward, over a 10-year period the Canadian tar sands would be responsible for more than a two ppm increase in global emissions. [73]

Waste of natural gas

To extract just one barrel of crude, companies must mine four tones of tar sands and burn 250 cubic feet of natural gas. Alternatively, they have to burn 1,000 cubic feet of gas to produce steam that is injected underground to loosen the bitumen from the sand. Whether the bitumen is extracted by mining or by *in situ* steam injection, it must still be upgraded into synthetic oil by adding hydrogen. This hydrogen is also derived from natural gas at the rate of 400 cubic feet of gas per barrel of synthetic fuel.

The upgraders that turn bitumen into synthetic fuel consume another 80 cubic feet of gas per barrel. Tar sands operations use as much gas every day as would be required to heat 3.2 million Canadian homes. As steam injection overtakes mining as the dominant extraction technique, it is expected that gas usage will increase to the equivalent that would be needed to heat all 11.5 million Canadian homes.

Burning a valuable, relatively clean-burning fuel like natural gas to extract bitumen has been compared by Alberta's former Treasurer Jim Dinning to "using gold to produce lead." As explained above, the Alberta government allows tar sands operators to write off part of their costs for purchasing natural gas against their royalty payments. Yet another part can be written off against provincial and federal corporate taxes. This perverse subsidy may cost Albertans as much as $31 billion between 2010 and 2019 if government projections for natural gas prices prove accurate.[74]

Arctic drilling threatens a fragile ecosystem

The disaster at British Petroleum's Deepwater Horizon oil rig in the Gulf of Mexico is a clear warning about the danger of trying to extract every last drop of conventional oil from ever more remote locations. The U.S. Geological Survey reports that 22 percent of the world's yet to be discovered petroleum resources (the equivalent of 412 billion barrels of oil) lie underneath the Arctic Ocean. That's over twice as much as thought to be recoverable from the tar sands using current technologies. They include some 90 billion barrels of technically recoverable oil and 1,670 trillion cubic feet of natural gas.[75]

The Canadian government is spending $100 million on a Geo-Mapping for Energy and Minerals program searching for oil, gas and minerals in the Arctic, despite the fact that petroleum exploration endangers its fragile ecology. An oil spill in the Arctic would be particularly destructive and its effects prolonged as the cold water would prevent the oil from quickly breaking up. According to Gerald Butts, president of WWF Canada: "Environment Canada spent millions in the 1970s on test spills in the Beaufort [Sea]. Officials lost track of the oil plume beneath the ice cover and concluded that none of the conventional approaches – dispersants, booms, burning – would work in Arctic waters."[76]

Despite the ecological fragility of the Arctic region, oil companies wanting to explore for oil in the Beaufort Sea are pressing the National Energy Board to suspend a regulation that requires them to be able to drill relief wells during a single drilling season.

In 2010, Canadian Inuit won a significant legal victory when a Nunavut court granted an injunction against the continuation of a seismic mapping exercise on the grounds that firing air guns underwater threatens narwhal, walrus, beluga whales, seals and polar bears. Nevertheless, Natural Resources Canada said it "remains committed to … its geo-mapping program."[77]

NAFTA an obstacle to energy policy independence

Deceleration of tar sands investment and a ban on Arctic drilling would require careful allocation of the remaining supplies of conventional oil and gas. This in turn requires slowing petroleum exports to the United States since these account for two-thirds of Canadian oil production. However, the ability of Canada to conserve non-renewable oil and gas by reducing exports is severely limited by obligations enshrined in the North American Free Trade Agreement (NAFTA).

As explained in *Over a Barrel: Exiting from NAFTA's Proportionality Clause*,[78] NAFTA Article 605 obliges Canada to make available to the U.S. the same proportion of its total supply of oil and gas as was exported over the previous three years, even if these exports cause shortages for Canadians. According to the most recent data available, if Canada chose to cut back 10 percent of its oil production for conservation purposes, it would still be obliged to make available 67.5 percent of its oil production for export to the United States.

As a result Canadians would face a domestic shortfall of 46 million barrels of oil a year, equivalent to 26 days of domestic consumption. If a similar conservation measure of a 10 percent production reduction were applied to natural gas, Canadians would face a shortfall of 289 billion

cubic feet of natural gas over a year's time, equivalent to 28 days worth of domestic consumption.[79]

For Canada to begin to make a transition away from dependence on fossil fuels, and particularly on the tar sands, it is crucial to regain energy policy independence by either renegotiating NAFTA to eliminate the proportional sharing clause or, if that is not possible, abrogating the whole agreement.

KAIROS Policy on the Tar Sands and Energy[80]

(1) No further approvals for tar sands projects.

(2) Support Indigenous communities' and environmental groups' longstanding calls for independent studies, funded by the Alberta and federal governments, on the cumulative impacts of the tar sands development, especially on health, water and ecosystems. These studies must involve Indigenous people and be accessible to them and the public.

(3) The federal government must develop a clean and sustainable energy strategy, based on conservation and the development of renewable energy as well as a funded transition plan for sustainable jobs in a renewable energy sector. The principles of ecological sustainability and Indigenous rights must be applied to the development of a renewable energy projects.

PART FOUR Financial Sector Locus of Wealth Accumulation

As Rosario Bella Guzman writes in her AGAPE study on *Establishing the Links between Wealth Creation, Poverty and Ecological Devastation: The Asian Experience:* "Tremendous wealth is being created outside the production sphere with increasing 'financialization' of the world economy … [involving] increasing profitability of speculative and unproductive financial activities."[81]

Globally the financial sector has grown more rapidly than any other part of the world economy. Analyst Sony Kapoor notes that the turnover in financial markets has "expanded from about 15 times world GDP in 1990 to almost 70 times world GDP in 2007 just before the crisis hit."[82]

The expansion of Canada's financial sector has reflected this global trend. Relative to its size in 1980, it is now almost twice as big as a share of the economy. Since 2001, it has grown "at twice the pace of the economy as a whole."[83]

The Bank for International Settlements points out that the rapid and extensive expansion of global finance is due in part to financial firms' resort to "high leverage as a way to boost short-term profitability."[84] Globally banks have retained smaller proportions of their customers' deposits, lending larger portions or investing in new financial instruments. They also "took full advantage of cheap short-term funding" to expand their investment portfolios.[85] In other words, they used other peoples' money to invest in what turned out to be very risky markets, whether for sub-prime mortgages packaged as Collateralized Debt Obligations or for all kinds of exotic derivatives.[iv]

Canadians were spared from the worst of the 2008 financial crisis in part because Canadian banks had not invested as deeply in those exotic financial instruments whose implosion precipitated the crisis. As political economy journalist Thomas Walkom observed: "Canadian bankers … will admit privately [that] most just hadn't gotten around to indulging in the kind of arcane financial abracadabra that precipitated the financial crisis elsewhere."[86]

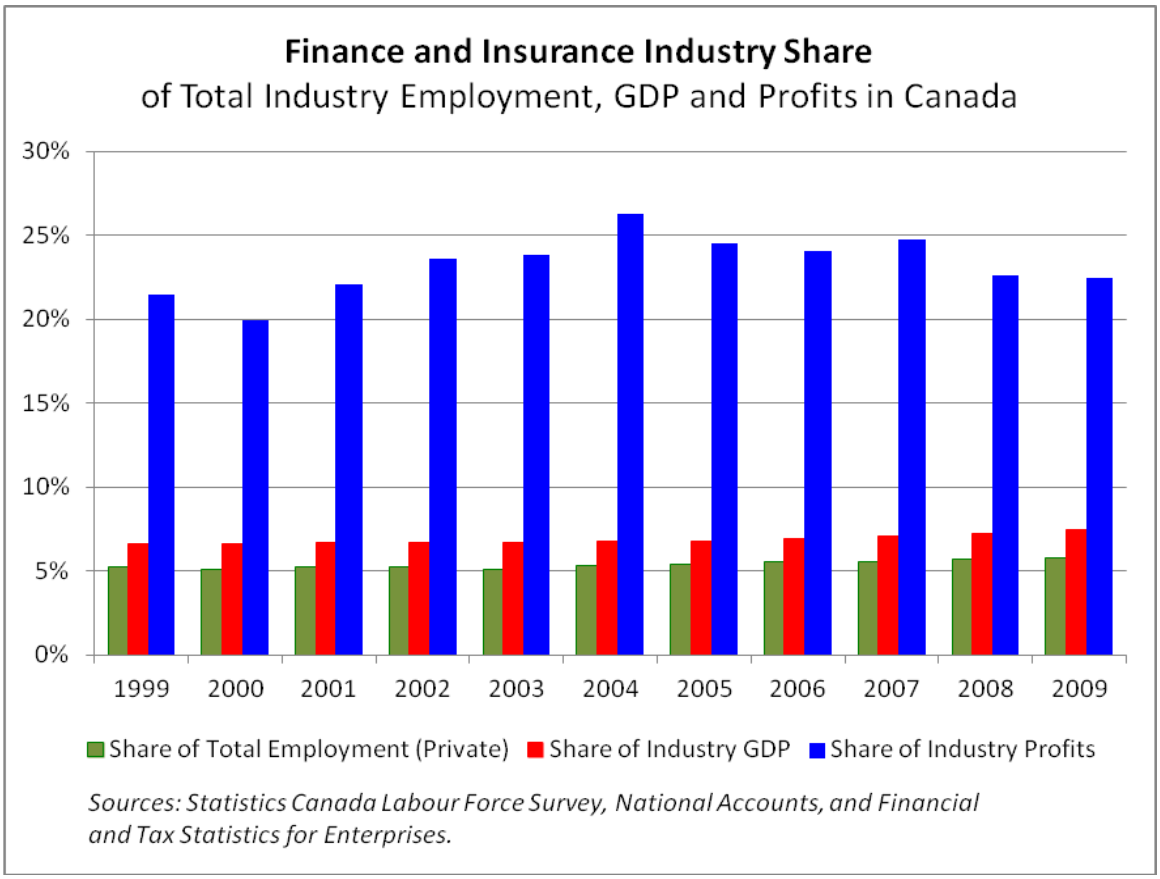
Secondly, and more importantly, our financial firms were more tightly regulated than those in the U.S. or Europe. Canadian banks were less highly leveraged than their peers in the period prior to the financial crisis because they were required to keep more capital on hand in relation to their assets, i.e., the amounts they lent or otherwise invested. At the beginning of the crisis, "Canadian banks had overall assets amounting to less than 20 times their capital, while major U.S. banks had 30 times more assets than capital and some European banks were leveraged up to 50 times."[87]

As a result, Canadian financial corporations did not suffer losses as large as those endured by their U.S. and European counterparts. Although the profits earned by Canadian financial and insurance companies did decline in 2008 and 2009, no Canadian financial institution went bankrupt.

[iv] For a description of the exotic financial instruments and the innovations that brought on the financial crisis, see John Dillon, "The Root Causes of the Current Financial Crisis" in Pamela Brubaker and Rogate Mshana, eds., *Justice Not Greed*, Geneva: World Council of Churches, 2010, pp. 86-103.

Canadian banks are significant investors in fossil fuel production. Between 2004 and 2008 they financed $161 billion worth of oil, gas and coal extraction projects.[88] Canada's five major banks have provided commercial loans and underwriting to 23 major tar sands companies. The banks' investments in fossil fuels are almost 22 times as large as their investments in renewable energy.

As the following chart shows, while the financial sector employs just over five percent of the private labour force and constitutes only about seven percent of industry GDP, it consistently accounts for over 20 percent of all profits.



Source: Toby Sanger, *Making Finance Pay*, Ottawa: Canadian Centre for Policy Alternatives, November 2010. Used with permission.

Financial sector under-taxed

Among the factors that account for the finance industry's high profits are the benefits it derives from low and declining corporate income taxes, its exemption from sales taxes, such as the Goods and Services Tax or the Harmonized Sales Tax, and the preferential tax rates applied to capital gains made by the sector.

Over the five years from 2005 through 2009, Canadian banks and other depository credit institutions earned on average $27.5 billion a year in profits.[89] Just as the tar sands companies have benefited from under-taxation of the economic rents (excessive profits) generated by their

operations, so too have the banks and other financial companies been the biggest beneficiaries of ongoing cuts to corporate income taxes in Canada.

BMO Capital Markets calculates that, thanks to a series of rate cuts by federal and provincial governments, "the effective corporate income tax rate for Canada's big six banks declined from 31.6 percent in 2000 down to an estimated 20.7 percent in 2010."[90]

Toby Sanger, an economist with the Canadian Union of Public Employees, calculates that cuts in corporate income tax rates have saved the finance and insurance industry about $4 billion a year as of 2010 when compared to the tax rate that applied in 2001. Further planned rate cuts will increase these savings to approximately $6.1 billion a year by 2012.[91]

The sector also benefits from most kinds of financial services being exempt from federal and provincial sales taxes. Moreover, the financial sector has benefited from preferential tax rates for capital gains and stock options. These preferences increase the flow of funds into the sector and act as an inducement for executives to structure their compensation packages to include more stock options. Sanger calculates the combined value of these tax preferences and tax cuts is currently worth approximately $11 billion a year. His projections show that the benefits could amount to $15 billion a year by 2014.[92]

Tax reform for equity and sustainability

Reform of the tax system is an immediately feasible way to reduce inequality, fund social programs and finance investments in sustainable development in harmony with Earth's ecological carrying capacity.

Theologian Rebecca Todd Peters invokes images of covenant relationships between God and peoples as "a strong foundation for developing a theological basis for decisions about tax policy. Remembering our own covenant relationship with God, we are called to think about our covenant responsibilities to each other as Christians in community; to the earth and all our neighbours, near and far; and to God."[93] These values lead to advocacy for tax reform to fight poverty, redistribute wealth and care for the wellbeing of the human and non-human community of life on Earth threatened by ecological devastation through climate change.

Reforms to individual taxes

As noted in Part One, changes in income tax rates are partially responsible for growing income inequality in Canada. Historically high-income earners were taxed at much higher rates than the current 29 percent federal income tax for all incomes over $127,000 a year. When provincial income taxes are accounted for, the highest marginal tax rate is 46 percent in Ontario and the lowest 39 percent in Alberta.

Author Linda McQuaig and professor of tax law Neil Brooks suggest that the federal and provincial governments cooperate to add two new income brackets. The first is a combined 60 percent rate for incomes over $500,000 (12.5 times as much as the Canadian median income). They also propose a top rate of 70 percent for those earning more than $2.5 million a year (60 times as much as the median income).[94] While very few Canadians earn more than $2.5 million a

year, a handful earn many times more. In 2009 the 100 highest paid corporate CEOs in Canada earned on average $6.6 million or 155 times the income of the average full-time worker.[95]

The 2011 Alternative Federal Budget issued by the Canadian Centre for Policy Alternatives notes that instituting a new personal income tax bracket for individuals earning over $250,000 to $750,000 a year could raise another $2.2 billion a year. This would affect less than one percent of tax filers.

Another tax reform would restore an inheritance tax that has not existed in Canada since 1972 when the estate tax was abolished. McQuaig and Brooks suggest an individual might receive $1.5 million in inheritance and gifts tax free before an inheritance tax kicks in, starting at a low rate and rising to 70 percent for fortunes worth $50 million or more.[96]

McQuaig and Brooks also advocate closing loopholes such as taxing only half of the revenue from capital gains. Toby Sanger notes that over 65% of capital gains income goes to the top 6% of tax filers in Canada. The unfairness of taxing capital gains at a lower rate than other income is captured in a rhetorical question asked by economist Joseph Stiglitz: "Why should those who make their income by gambling on Wall Street's casinos be taxed at a lower rate than those who earn their money in other ways?"[97]

In addition, McQuaig and Brooks advocate clamping down on international tax avoidance. More than one-third of the US$8 to US$10 trillion owned by those whom bankers call "High New Worth Individuals" is hidden in offshore tax havens such as the Cayman Islands, Switzerland or Liechtenstein.[98] The solution they propose is "a requirement that all financial institutions, whenever they make a payment to a client, report that payment to the tax authorities of the country in which the client resides."[99]

Christian Aid policy advisor Alexander Cobbam notes that tax authorities and anti-corruption officials need better information on international financial transactions in order to stem illicit international financial flows estimated to be worth as much as US$1 trillion a year. The solution advocated by Christian Aid and the Tax Justice Network is "a multilateral agreement requiring *automatic* exchange of tax information between jurisdictions."[100]

Reform corporate taxation and royalty collection

Implicit in the discussion above of economic rents and royalties collected from oil and gas corporations is a needed reform – raising royalty rates to cover 100 percent of the excess profits that now accrue to private companies. Royalty revenues accruing to the provincial treasury would be available for investments to diversify away from dependence on resource extraction by building capacity in areas such as renewable energy.

The Alternative Federal Budget 2011 notes how the petroleum industry and financial corporations have benefited from successive reductions in corporate income tax rates. It proposes to reinstate the federal corporate income tax rate to 28 percent for the oil and gas and financial industries. It states that restoring federal and provincial corporate income tax rates to their 2002 levels would return $4 billion to their combined treasuries in 2011.

In addition to calling for restoring corporate income tax rates for the finance sector, Toby Sanger calculates the revenues that could be raised by three other types of tax reforms:

- eliminating the preferential tax rate for corporate capital gains and stock options would provide governments an estimated $3.9 billion in 2011 with about $1 billion of that coming from the finance sector;
- levying a Financial Activities Tax of five percent on profits and remuneration in the financial sector would raise another $4.7 billion a year in 2011 and $5.2 billion in 2013;
- charging a 0.5 percent transactions tax on stocks traded in Canada, similar to that already levied on stock trading in the United Kingdom, would raise another $3.7 billion in 2011 rising to $4 billion by 2013.[101]

Tax carbon emissions

One way of encouraging companies and individuals to reduce their greenhouse gas emissions is to put a price on carbon. In our KAIROS Briefing Paper *Pricing Carbon: A Primer*,[102] we discuss the relative merits of proposals for cap-and-trade schemes versus carbon taxes. As we pointed out, trading systems that turn greenhouse gas emissions into a marketable commodity often are ineffectual and have negative consequences, especially for communities in the global South.

In that study we conclude that putting a price on carbon through a well-designed carbon tax is a preferable option but still not a sufficient measure for deterring GHG emissions. In addition, more direct measures are needed, including prohibiting the extraction of the most polluting kinds of fossil fuels such as coal and bitumen from the tar sands and investing in energy efficiency and community-held renewable forms of energy.

While carbon taxes are promoted as incentives for companies and individuals to take measures to reduce their emissions, their potential revenues can also contribute to goals of social equity and making a transition to low-carbon forms of energy generation. The Alternative Federal Budget (AFB) shows that a carbon tax set at an initial rate of $30 per tonne of carbon dioxide would raise $7.5 billion a year if levied on non-industrial fuel users and another $10 billion if also levied on industrial carbon emitters.[103]

The AFB proposes that half of the carbon tax revenues be refunded at an annual rate of $300 per adult and $150 per child so that low-income earners would not be unduly penalized. Thus the carbon tax would have a progressive, redistributive dimension since high-income earners are responsible for a larger share of greenhouse gas emissions. The rest of the money raised by the carbon tax would fund energy efficiency, renewable energy and climate change adaptation measures.

Another possibility is to make companies pay the costs of the ecological damage they create through levies on their carbon footprints or other externalities, such as the costs of cleaning up tar sands tailing ponds.

Canadians Owe Ecological Debt to Global South

The Dar es Salaam Statement on Linking Poverty, Wealth and Ecology in Africa challenges the churches in the North to "acknowledge the privileges derived from complicity – through their production and consumption patterns – in systems of domination and exploitation that dehumanize and destroy life in Africa."[104]

Canadians and others of the global North whose historical CO_2 emissions have overtaxed the world's ocean, vegetation and atmospheric carbon absorption capacity owe an ecological debt to Africans and other peoples of the global South who lack access to their fair share of the Earth's capacity to support life. The average Canadian emits 22.2 tonnes of greenhouse gases each year, while the average person in Sub-Saharan Africa is responsible for only 2.3 tonnes.

Cancelling Southern countries' financial debts is one way to begin to make restitution. But this gesture is insufficient without substantial cuts to our own greenhouse gas emissions. Furthermore Canada and other Northern countries must contribute to the financial cost of measures to mitigate the impact of, and adaptation to, climate change in the South.

Ideally this restitution could be financed through a global Financial Transactions Tax (FTT) on a broad range of financial instruments including stocks, bonds, currencies and derivatives. Such a global FTT could raise hundreds of billion of dollars a year as well as discourage unproductive financial speculation.[105]

If a global FTT cannot be established in the near term, a more limited tax on foreign exchange trading could be a significant first step. Canada should join with other countries in levying a 0.005 percent tax on all global currency trades as suggested by the Taskforce on International Financial Transactions and Development, appointed by the inter-governmental Leading Group on Innovative Financing to Fund Development.[106] Such a tax would raise approximately US$30 billion a year for an international fund to fight poverty and the costs of climate change adaptation and mitigation in developing countries.

Measures to reduce poverty, inequality and greenhouse gas emissions

Outlining a complete program for addressing the challenges posed by poverty, inequality and climate change is beyond the scope of this study. Nevertheless, it is possible to suggest some measures that could be implemented in the near term.

Anti-poverty campaigners advocate the following measures to address poverty and inequality:[107]

- raise minimum wages – federal and provincial/territorial – to at least $11 an hour;
- raise adequacy and accessibility of provincial social assistance;
- increase tax credits such as the refundable GST tax credit and the Working Income Tax Benefit (Campaign 2000 calls for increasing the Canada Child Tax Benefit and the National Child Benefit Supplement to a maximum of $5,400 per child per year);
- provide universal, publicly-funded early childhood education and child care services;
- renew commitment to social housing to deliver 25,000 affordable housing units annually;

- restore eligibility for Employment Insurance (currently only 40 percent of unemployed Canadians are eligible);
- give grants to low income students for post-secondary education;
- reform the Canada Pension Plan to provide seniors with a replacement rate of 50% of pre-retirement earnings up to a maximum amount;
- fully implement the Kelona Accord of 2005, cancelled by the Conservative government following the 2006 federal election, in which the federal, provincial and territorial governments made a commitment to Indigenous peoples to improve their education, employment and living conditions through governmental funding and other programs.

While these measures would address income shortfalls, they are only a beginning. Deeper changes in public values and priorities are needed. According to Michael Polanyi: "Poverty is, indeed, primarily caused by a lack of income, but it also has to do with a perceived sense of deprivation and dissatisfaction that is an offshoot of a market society hooked on ever-increasing consumption. Government policies and priorities need to be changed, but at the same time, we need to build a renewed sense of compassion and community among and between citizens."[108]

Polanyi exhorts all of us to reflect critically on our participation in a culture that encourages over-consumption and wealth accumulation, which also causes poverty. He cites theologian Gregory Baum: "Encountering society as an ethical, interactive reality engenders a commitment to modesty and self-limitation so that space is left for other societies, resources are saved for future generations, and the natural environment is rescued from destruction."[109]

As noted in Part One, a comprehensive approach to poverty and inequality must include opportunities for marginalized people to become involved in building a sustainable society. To achieve this goal we must overcome "barriers to accepting the credentials of immigrants, racism and sexism in the workforce, and a lack of enforcement of employment standards."[110] In addition revenues from tax reform and from raising royalty rates on oil and gas extraction should be used to fund the transition to a low-carbon society and the creation of "green jobs." These may be defined as jobs that reduce the ecological impact of enterprises to sustainable levels "while providing decent working and living conditions to all those involved in production."[111]

The Green Economy Network, representing a consortium of labour, environmental and ecumenical organizations, including KAIROS, calculates that:

- an annual investment of $4.65 billion in renewable energy projects (chiefly for wind, solar and geothermal energy) will create 92,000 full-time jobs for a year;
- an investment of $50 billion over 10 years in retrofitting Canadian homes and buildings to save energy would generate 988,800 jobs over a decade and reduce Canada's greenhouse gas emissions by 10 million tonnes a year by 2020;
- an investment of $55 billion in public transit over five years would generate 211,599 jobs annually;
- an investment of $25.7 billion in inter-city high speed rail service over five years would create 101,647 jobs per year.[112]

Furthermore these jobs are spread across the country with the potential to involve preferential hiring for people from marginalized communities.

PART FIVE: The World Economy Must be Transformed

The current trajectory of the world economy is both financially and ecologically unsustainable.

Brazilian economist Marcos Arruda writes in his insightful contribution to *Justice Not Greed* (a collection of studies by the World Council of Churches' Advisory Group on Economic Matters): "The tsunami of unreal wealth that has inundated the planet is destined … to ebb. All the public monies in the world put together cannot save it or cover up the speculators' losses. If the authorities should try to do so, they would flood the world with another tsunami of unreal wealth, closing a catastrophic and irrational vicious circle. If they fail to change the rules of the financial game, hyperinflation or stagflation, more wealth concentration and deeper trenches between social classes will be unavoidable."[113]

It is simply not possible for finance capital, delinked from actual production of real goods and services, to go on increasing exponentially forever. As popular educator Mark Hathaway and theologian Leonardo Boff explain: "The money accumulating … through debt and more sophisticated financial manipulations … is not real wealth at all – it is simply a kind of lien against future production that, by social agreement, can be redeemed for real wealth at a later time."[114]

Real wealth cannot grow fast enough to keep up with financial capital growing at exponential rates. Moreover real wealth is subject to spoilage as when grain rots or clothes get eaten by moths. "At best natural wealth (like a forest or crops growing in a field) can grow at rates fixed by the inputs of sun, clean water, air and healthy soil."[115]

From an ecological point of view, it is inconceivable that real wealth can grow fast enough to redeem all the fictitious financial wealth being created by nothing more than manipulating zeros and ones on computer chips. This phantom wealth will either disappear when speculative bubbles burst, as happened during the sub-prime mortgage crisis, or be eaten away by inflation.

Hathaway and Boff observe: "The financial economy's quest for profit concentrates wealth in the hands of investors while impoverishing the poor and the wider Earth community. On the one hand, to meet the ever-mounting lien against future production, the world is forced to continue its obsession with unlimited growth, depleting the natural wealth of the planet in the process. At the same time, inflationary pressures particularly impoverish the poor who do not earn investment income at exponential rates."[116]

Ecological unsustainability

Ecologists point to a wide variety of ways in which the Earth's life-supporting systems are being depleted[117]:

- We are losing 23 billion tons of topsoil every year.
- Sixty-five percent of once-arable land is now desert.
- More than half of all forests that existed in 1950 have been felled.

- One-quarter of all coral reefs have been destroyed and half of those remaining are endangered.
- Ninety percent of large fish are gone from the seas.
- Half of the world's wetlands were destroyed in the 20th century.
- Eighty percent of the world's rivers are in peril, affecting five billion people.
- Species extinction is taking place at a rate 1,000 times greater than before humans existed.
- According to the ecological footprint indicator, humans already use 125 percent of the Earth's regenerative capacity.
- For the whole of the world's population to live at North American standards would require two to three extra planets the size of Earth.

While each of these indicators is cause for alarm, the most pressing issue is the declining capacity of the ecosphere to absorb carbon dioxide produced by burning fossil fuels. We may surpass the limits of sustainability, not because natural goods generally are in short supply, but because we have abused one crucial determinant.

Moreover the threat that climate change poses to all life on Earth demands that we must reduce emissions of greenhouse gases substantially in order to keep the increase in global temperatures since pre-industrial levels as far below two degrees Celsius as possible. As discussed above, it will be virtually impossible for Canada to meet this challenge if the planned expansion of production from the tar sands is allowed to proceed.

The challenge then is to reorient economic policies away from limitless expansion of dubious financial wealth and investments in fossil fuel extraction towards policies that redistribute incomes and channel investments into energy conservation and the development of renewable forms of energy.

Vision of a sustainable economy

While a complete description of a sustainable economy is beyond the scope of this study, here are some observations drawing on a longer KAIROS background paper, *The Economics of Sustainability*.[118]

In a sustainable economy, priority must be given to activities that address poverty and inequality, restore ecological equilibrium and sustain life.

Recognizing the dignity of human labour must be a hallmark of a sustainable economy. As theologian Lim Yong-Bock notes: "Work is the God-given vocation to care for life and the garden of life."[119]

A sustainable economy would see more desireable kinds of work spread among more workers. And everyone would enjoy more leisure time for cultural and spiritual pursuits[120] through a shorter work week and work year.[121]

When ecological limits are respected, the production of some goods will require more labour and more time. For example, organic agriculture requires more labour than spraying herbicides. Sustainable forestry practices require more time and labour than clearcutting.

In a just and sustainable economy, revenues from progressive taxes may be used for social programs to enable seniors or persons who cannot work due to illness or disabilities to live dignified lives.

In a sustainable economy, remuneration is delinked from market-based wages or salaries. Women doing housework and child care would be remunerated for their labour. Unpaid domestic work constitutes approximately 50% of all productive activity in industrial countries and up to 60% to 70% in many developing countries. The 1995 Human Development Report estimated unpaid work to be worth US$16 trillion a year with US$11 trillion of that performed by women.[122]

Can Limits to Inequality Help Determine a Greed Line?

Theologian Sallie McFague writes: "Sharing of material goods [distributive justice] is the principal means to sustainability… There must be limits to inequality in terms of minimum and maximum incomes and also in terms of how much of nature's wealth we use now versus hold for future generations."[123]

Minimum incomes must be sufficient, not just to provide subsistence levels of necessities such as food, shelter and clothing, but also to ensure that sufficient means to participate in civic life and engage in cultural and artistic endeavours.

How might maximum incomes be defined? How much inequality is acceptable in order to reward real differences and contributions rather than just multiplying privilege?

One measure could be in terms of a multiple of the minimum established for all citizens. The ancient Greek philosopher Plato suggested that the wealthiest should be no more than four times as rich as the poorest. Ecological economist Herman Daly observes: "There is no God-given definition of what the limits to inequality should be. … [T]he exact limits to inequality are much less important than the principle that limits be placed somewhere."[124]

Daly suggests that limiting maximum incomes to 10 times the minimum might serve as a benchmark. He observes: "Universities, civil services and the military seem to manage with a factor of 10 to 20. In the U.S. corporate sector it is over 500. As a first step could we not try to lower the overall range to a factor of, say, one hundred?"[125]

Conclusion

In this study we have described how poverty and inequality endure in Canada in the midst of the incredible wealth generated by the petroleum and finance industries. We have suggested a variety of measures that would reduce poverty, improve wealth distribution and reduce ecological destruction. These measures range from reforms of taxation to the more ambitious challenge of reorienting the economy so that we might live within the limits of the Earth's ecological carrying capacity.

The churches have a variety of roles to play in addressing immediate needs as tireless advocates for reforms that will overcome poverty and inequality while working for fundamental transformation of our economic system into one that is just and sustainable for all, living within the bounds of the Earth's biophysical limits.

One of the most significant contributions we Christians can make is through influencing the wider culture by practicing the values we profess in our daily lives. As Michael Polanyi writes: "Ending poverty depends not only on changes to government policy, … but also on a change in mainstream culture and the way each one of us lives our lives. …This deep cultural change will require a transformation in how we conceive of a meaningful life – a shift away from accumulation and consumption towards the acceptance of sufficiency, and an embracing of human solidarity. This deeper change would recognize that poverty and wealth are not just about income, and that there is a deeper culture of deprivation in market-based societies."[126]

We Christians in the global North must admit our complicity in systems of exploitation and domination and resolve to make restitution through repayment of the ecological debt we owe to the Earth and to the peoples of the global South.

The churches have a prophetic vocation to witness to the profound transformations needed if we are to avoid catastrophic ecological disaster. This must involve nothing less than a call for *metanoia*, a sincere conversion away from lifestyles based on excessive consumption of material goods that depletes the Earth's capacity to sustain life. We must take seriously Jesus' teaching that "one's life does not consist in the abundance of possessions." (Luke 12:15)

The Andean Indigenous peoples' vision of "living well," that is, living in harmony with the natural world and with our Creator can be a guide as we envision turning towards a sustainable economy where all people share in the Creator's gifts of clean water, nutritious food, adequate shelter and opportunities to care for one another, engage in creative work and deepen their spiritual lives.

1 Jorge Atilio Silva Iulianelli, "Study on Poverty, Wealth and Ecology in Brazil", in Rogate R. Mshana, ed., *Poverty, Wealth and Ecology: Latin America & Caribbean Perspectives*, Geneva: World Council of Churches, 2009, p. 58.
2 Ibid.
3 UNRISD Research and Policy Brief 10, Geneva: UN Research Institute for Social Development, May 2010, p. 2.
4 Seth Klein and Armine Yalnizyan, "Reducing poverty, inequality will spur economic recovery," *CCPA Monitor*, March, 2010, p. 6.
5 National Council of Welfare, Poverty Profile 2007, Ottawa: National Council of Welfare, 2009, p. 1.
6 Armine Yalnizyan, *The Problem of Poverty Post-Recession*, Ottawa: Canadian Centre for Policy Alternatives, August 2010.
7 Sources: National Council of Welfare, Poverty Rates http://www.ncw.gc.ca/d.1tas.2t1@-eng.jsp?chrtid=3 and Statistics Canada Table 3 Percentage of persons in low-income 2000-2009 http://www.statcan.gc.ca/daily-quotidien/110615/t110615b3-eng.htm
8 *Federal Poverty Reduction Plan: Working in Partnership Towards Reducing Poverty in Canada*, Ottawa: House of Commons Standing Committee on Human Resources, Skills and Social Development and the Status of Persons with Disabilities, November 2010.
9 Richard Wilkinson and Kate Pickett, *The Spirit Level: Why Equality is Better for Everyone*, London: Penguin Books, 2010.
10 Sheri Torjman and Ken Battle. "Bleeding heads and bleeding hearts." *Toronto Star* on line commentary at thestar.com, August 11, 2011.
11 Ibid., p. 4.
12 Branko Milanovic, *Inequality and the Global Crisis*, Transition, March 16, 2011, at http://dmarionuti.blogspot.com/2011/03/inequality-and-global-crisis.html.
13 Ibid.
14 Ibid.
15 Armine Yalnizyan, *The Rise of Canada's Richest 1%*, Ottawa: Canadian Centre for Policy Alternatives, 2010, pp. 3-4.
16 See Conference Board of Canada. "Hot Topic: Canada Inequality" at http://www.conferenceboard.ca/hcp/hot-topics/canInequality.aspx?utm_source=endcard&utm_medium=video&utm_campaign=hcp_inwardfdi
17 Armine Yalnizyan, op. cit., p. 3.
18 Ibid., p. 4.
19 Les Whittington, "Tory tax policy may worsen disparities," *Toronto Star*, May 28, 2011, p. A19.
20 Cited in John Foster and John Dillon, "NAFTA in Canada: The Era of a Supra-Constitution", *Lessons from NAFTA: The High Cost of "Free Trade"*, Ottawa: Canadian Centre for Policy Alternatives, 2003, p. 92.
21 John W. Foster, "NAFTA: Beyond the Security and Prosperity Partnership," *The USA and Canada 2011*, London: Routledge/Europa, 2011. p. 15.
22 Wilkinson and Pickett, op. cit., pp. 244-245.
23 Cited in Dan Healing, "Trillions predicted in oil sands spending", *Calgary Herald*, May 16, 2011.
24 Calculated from Statistics Canada, "Operating Profits by Major Industry", *Quarterly Financial Statistics for Enterprises*, Catalogue No. 61-008-XIE.
25 Prime Minister Stephen Harper, Speech to the Canada-UK Chamber Commerce, London, July 14, 2006.
26 R.B. Dunbar, *Canada's Oil Sands – A World Scale Hydrocarbon Resource*, Calgary: Strategy West, July 2010.
27 Cited in Gary Kenny, "The SpOILs of War: US Interests in Iraq", Toronto: KAIROS Canadian Ecumenical Justice Initiatives, March 2003, p. 2.
28 Estimates of Venezuela's oil reserves vary widely. The *Oil and Gas Journal* puts them at 99 billion barrels while OPEC data indicates as much as 297 billion. The disparity reflects differing views on how much of the heavy oil in the Orinoco basin should be considered conventional crude and how much is contained in bitumen deposits similar to the Canadian tar sands that are extractable only through enhanced recovery techniques such as Steam Assisted Gravity Drainage. The United States Geological Survey cites estimates of recoverable heavy oil from the Orinoco basin ranging from 380 billion barrels to 652 billion with a mean estimate of 513 billion barrels. See U.S. Geological Survey, *An Estimate of Recoverable Heavy Oil Resources of the Orinoco Oil Belt, Venezuela*, Fact Sheet 2009-3028, October 2009, at http://pubs.usgs.gov/fs/2009/3028/pdf/FS09-3028.pdf.

29 Sources for data used in this chart include World Energy Council; U.S. Geological Survey; U.S. Energy Information Administration; Strategy West; OPEC Annual Statistical Bulletin; *Oil and Gas Journal*.
30 R.B. Dunbar, *Existing and Proposed Canadian Commercial Oil Sands Projects*, Calgary: Strategy West, January 2011.
31 *Upstream Dialogue: The Facts on Oil Sands*, Calgary: Canadian Association of Petroleum Producers, March 2011, p. 19, at http://www.capp.ca/getdoc.aspx?DocId=178979&DT=NTV
32 Ibid., p. 20.
33 Clare Demerse, *Reducing Pollution, Creating Jobs*, Drayton Valley, Alberta: Pembina Institute, 2011, pp. 32-33.
34 *Green Infrastructure Investments*, Ottawa: Canadian Labour Congress, March 2009.
35 Andrew Nikiforuk, "Canada's road to petro-state lined with greed, pollution", *CCPA Monitor*, September, 2010, p. 11.
36 Albert Berry, "The natural resource curse in 21st-century Latin America", *Canada Watch*, Fall 2010, p. 23.
37 Diana Gibson, *The Spoils of the Boom*, Edmonton: Parkland Institute, June 2007, pp. iii-iv.
38 Diana Gibson et al., *ACSW Social Policy Framework 2010: Visioning a More Equitable and Just Alberta*, Edmonton: Alberta College of Social Workers, March 2010, p. 21.
39 Ibid., p. 29.
40 Ibid., p. 29.
41 Ibid., pp. 21 and 27.
42 *Christian Faith and the Canadian Tar Sands: A KAIROS Reflection on Sustainability and Energy*, Toronto: KAIROS Canadian Ecumenical Justice Initiatives, September, 2008.
43 Andrew Nikiforuk, "Tar sands development fuels Canada's deindustrialization", *CCPA Monitor*, May 2010, p. 11.
44 Tony Clarke, *Tar Sands Showdown*, Toronto: James Lorimer, p. 195.
45 Cited in Josh Harkinson, "Scenes From the Tar Wars", *Mother Jones*, May/June 2008.
46 Cited in Danielle Droitsch and Terra Simieritsch, *Canadian Aboriginal Concerns With Oil Sands*, Briefing Note, Drayton Valley, Alberta: The Pembina Institute, September 2010, p. 2.
47 Concluding Statement: KAIROS Ecumenical Delegation to the Athabasca Tar Sands, June 11, 2009, at http://www.kairoscanada.org/en/get-involved/campaign/tar-sands-delegation/delegation-statement/
48 Mitchell Anderson, "$1.7 Billion and Rising: Taxpayers' Gas Bill for Oil Sands", *The Tyee.ca*, November 9, 2010.
49 Regan Boychuk, *Misplaced Generosity: Extraordinary profits in Alberta's oil and gas industry,* Edmonton: Parkland Institute, November 2010, p. 3.
50 Andrew Nikiforuk, "Tar sands development fuels Canada's deindustrialization," *CCPA Monitor*, May 2010, p. 11.
51 Tim Kiladze, "The game has changed for investors in oil sands", *The Globe and Mail*, March 24, 2011, p. B13.
52 Cited in Droitsch and Simieritsch, op. cit., p. 4.
53 *Upstream Dialogue: The Facts on Oil Sands*, op. cit., p. 30.
54 Cited in Keith Stewart and Melina Laboucan-Massimo, *Deep Trouble: The Reality of In Situ Tar Sands Operations*, Toronto and Edmonton: Greenpeace Canada, 2011, p. 4.
55 Andrew Nikiforuk, "Dirty oil is turning Canada into a corrupt petro-state", *CCPA Monitor*, May 2010, p. 10.
56 Cited in Stewart and Laboucan-Massimo, op. cit., p. 8.
57 See Michelle Mech, *A Comprehensive Guide to the Alberta Oil Sands*, May 2011, p. 6, at http://greenparty.ca/files/attachments/a_comprehensive_guide_to_the_alberta_oil_sands_-_may_20111.pdf
58 Ibid., p.,7.
59 See *The Anatomy of a Silent Crisis*, Geneva: Global Humanitarian Forum, 2009, p. 1, at http://www.bb.undp.org/uploads/file/pdfs/energy_environment/CC%20human%20impact%20report.pdf
60 United Nations Environment Program, *The Emissions Gap Report: Are the Copenhagen Accord Pledges Sufficient to Limit Global Warming to 2^0 C or 1.5^0C?*, Nairobi: United Nations Environment Program.
61 "Accord in line with 3.9 degree warming, say US researchers", *SUNS Bulletin #6862*, February 12, 2010.
62 Alex Kirby, *Climate in Peril: A popular guide to the latest IPCC reports*, Nairobi and Arendal: United Nations Environment Programme and GRID, 2009, p. 28.
63 François Gemenne, researcher at the Institute for Sustainable Development and International Relations in Paris, cited in Stephen Leahy, "Millions May Soon Be Fleeing the Floodwaters", IPS, June 9, 2011.
64 Data from report of the Intergovernmental Panel on Climate Change Working Group II 2007 as cited in James Hansen et al., *The Case for Young People and Nature: A Path to a Healthy, Natural, Prosperous Future*, at http://www.columbia.edu/~jeh1/mailings/2011/20110505_CaseForYoungPeople.pdf.

65 Nicholas Stern et al., *Stern Review Report on the Economics of Climate Change*, Cambridge: Cambridge University Press, 2006, Chapter 3, p. 57.

66 James Hansen et al., *The Case for Young People and Nature: A Path to a Healthy, Natural, Prosperous Future*, at http://www.columbia.edu/~jeh1/mailings/2011/20110505_CaseForYoungPeople.pdf

67 The disappearance of the Greenland ice sheet would raise global sea levels by seven metres. See "Greenland ice sheet faces 'tipping point in 10 years'." Greenhouse Neutral Foundation. Accessed September 9, 2010 at http://greenhouseneutralfoundation.org/articles/2010/08/13/greenland-ice-sheet-faces-tipping-point-in-10-years/

If the West Antarctic ice sheet were to disappear it could raise seal levels by a further six metres. See James Hansen et al., *The Case for Young People and Nature: A Path to a Healthy, Natural, Prosperous Future*. at http://www.columbia.edu/~jeh1/mailings/2011/20110505_CaseForYoungPeople.pdf.

68 See Environment Canada, "Canada's Greenhouse Gas Target and Emissions Projections", at http://www.climatechange.gc.ca/default.asp?lang=En&n=DC025A76-1.

69 Michelle Mech, op cit., p. 6.

70 Jeffrey Simpson, "When it comes to emissions, we have bureaucracy run wild", *The Globe and Mail*, September 3, 2011, F9.

71 James Hansen, *Storms of my Grandchildren: The Truth About the Coming Climate Catastrophe and Our Last Chance to Save Humanity*, New York: Bloomsbury, 2009, pp. 184-185, 236.

72 Leahy, Stephen, "Canada Spurns Kyoto in Favour of Tar Sands", IPS, June 13, 2011.

73 Calculations based on author's correspondence with Michelle Mech based on clarification of data from the Intergovernmental Panel on Climate Change.

74 Mitchell Anderson, "If the $30 Billion We Give Oil Sands Went to Green Energy", *The Tyee.ca*., November 26, 2010.

75 "Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle", U.S. Geological Survey (USGS), May 2008, at http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf.

76 Cited in Joyce Nelson, "Canada's preparedness for oil spill crisis sadly lacking", *The CCPA Monitor*, September 2010, p. 12.

77 Nathan Vanderklippe, "Court puts a halt to Arctic tests over Inuit fears of impact on sea life," *The Globe and Mail*, August 9, 2010.

78 Gordon Laxer and John Dillon, *Over a Barrel: Exiting from NAFTA's Proportionality Clause,* Ottawa and Edmonton: Canadian Centre for Policy Alternatives and Parkland Institute, 2008.

79 The numbers cited update the original calculations in *Over a Barrel* with the most recent data available from Statistics Canada *Energy Statistics Handbook* First Quarter 2011, Table 4.1 and Table 6.1, Ottawa: Statistics Canada, 2010.

80 "Drawing a Line in the Sand: Why Canada needs to limit tar sands expansion and invest in a green economy", KAIROS Position Paper, July 2010, at http://www.kairoscanada.org/fileadmin/fe/files/PDF/EcoJustice/TarSands/10-08-TarSands.pdf.

81 Rosario Bella Guzman, "Establishing the Links between Wealth Creation, Poverty and Ecological Devastation: The Asian Experience", *Poverty, Wealth and Ecology in Asia and the Pacific*, Geneva: World Council of Churches, 2010, p. 74.

82 Sony Kapoor, *The financial crisis - causes & cures*, Brussels: Friedrich Ebert Stiftung, 2010, p. 30.

83 Toby Sanger, *Fair Shares: How Banks, Brokers and the Financial Industry Can Pay Fairer Taxes*, Ottawa: Canadian Centre for Policy Alternatives, April 2011, p. 13.

84 *80th Annual Report*, Basel: Bank for International Settlements, 28 June 2010, p.74.

85 Ibid., p. 5.

86 Thomas Walkom, "It isn't a recovery without jobs", *Toronto Star*, March 13, 2010, p. IN3.

87 Finance Canada, *Protecting Canada's Future: Economic and Fiscal Statement*, Ottawa: Department of Finance, November 27, 2008, p. 63.

88 Jan Willem van Gelder et al., *Financing of fossil fuels and renewable energy by Canadian banks*, Profundo Economic research, The Netherlands, for the Rainforest Action Network, September 2008, Table 3, p. ii.

89 *Financial and Taxation Statistics for Enterprises*, Table 1-3, Operating profit by industries, Catalogue no. 61-219, Ottawa: Statistics Canada.

90 Cited in Toby Sanger, *Making Finance Pay*, Ottawa: Canadian Centre for Policy Alternatives, November 2010, p. 8.

91 Toby Sanger, *Fair Shares*, p. 9.

92 Ibid., p. 11.
93 Rebecca Todd Peters, "For Funding Our Values", in Rebecca Todd Peters and Elizabeth Hinson-Hasty, eds., *To Do Justice: A Guide for Progressive Christians*, 2008, Louisville: Westminster John Knox Press, p. 125.
94 Linda McQuaig and Neil Brooks, *The Trouble with Billionaires*, Toronto: Viking, 2010, p. 234.
95 Hugh Mackenzie, *Recession-Proof: Canada's 100 best paid CEOs*, Ottawa: Canadian Centre for Policy Alternatives, January 2011, pp. 4-5.
96 McQuaig and Brooks, op. cit., p. 242.
97 Cited in ibid., p. 235.
98 Ibid., p. 136.
99 Ibid., p. 139.
100 Alexander Cobham, "The Blood-Stained Silver Lining", in Pamela Brubaker and Rogate Mshana, eds., *Justice Not Greed*, Geneva: World Council of Churches, 2010, p. 176. Emphasis in original.
101 Toby Sanger, *Fair Shares*, p. 23 and Table 4 p. 25.
102 See KAIROS Policy Briefing Paper #20, *Pricing Carbon: A Primer*, November 2009.
103 See *The Alternative Federal Budget 2011* issued by the Canadian Centre for Policy Alternatives at http://www.policyalternatives.org/afb2011, p. 29.
104 The Dar es Salaam Statement on Linking Poverty, Wealth and Ecology in Africa, in *Report on AGAPE Consultation on Linking Poverty, Wealth and Ecology: African Ecumenical Perspectives*, November 2007, Geneva: World Council of Churches, 2007.
105 See John Dillon, "An Idea Whose Time Has Come: Adopt a Financial Transactions Tax", *KAIROS Policy Briefing Paper No. 24*, revised and updated May 2010. Toronto: KAIROS Canadian Ecumenical Justice Initiatives.
106 Committee of Experts to the Taskforce on International Financial Transactions and Development, *Globalizing Solidarity: The Case for Financial Levies*, Report for the Leading Group on Innovating Financing to Fund Development, Paris, 2010.
107 The measures listed here are drawn from two principle sources: *The Alternative Federal Budget 2011* issued by the Canadian Centre for Policy Alternatives at http://www.policyalternatives.org/afb2011 and Campaign 2000 to end child and family poverty in Canada at http://www.campaign2000.ca/.
108 Michael Polanyi, "Ending Poverty in Canada: From Political Advocacy to Social Transformation", *Global Economic Justice Report*, Volume 4, Number 2, Toronto: KAIROS: Canadian Ecumenical Justice Initiatives. June 2005, p. 14.
109 Ibid., p.14.
110 Ibid., p., 1.
111 This definition of green jobs is adapted from a Discussion Paper drafted by the International Trade Union Confederation for the United Nations High Level Panel on Global Sustainability, Madrid: International Trade Union Confederation, April 2011, p. 8.
112 *Making the Shift to a Green Economy: A Common Platform of the Green Economy Network*, Ottawa and Toronto: Green Economy Network, March 2011.
113 Marcos Arruda, "Profiting without Producing: The Financial Crisis as an Opportunity to Create an Economy of World Solidarity", in Pamela Brubaker and Rogate Mshana, eds., *Justice Not Greed*, Geneva: World Council of Churches, 2010, p. 140.
114 Mark Hathaway and Leonardo Boff, *The Tao of liberation: Exploring the Ecology of Transformation*, Maryknoll, New York: Orbis, 2009, p. 46.
115 Ibid., p. 46.
116 Ibid., p. 47.
117 Hathaway and Boff, op. cit., p. 19; and Maude Barlow "Our Common Future is Already Here" speech to the Environmental Grantmakers Association, October 2010, at http://www.commondreams.org/view/2010/10/13-6.
118 See John Dillon, *The Economics of Sustainability*, Toronto: KAIROS Canadian Ecumenical Justice Initiatives, June 2010, at http://www.kairoscanada.org/fileadmin/fe/files/PDF/EcoJustice/Climate/G20-EconomicsSustainability.pdf.
119 Kim Yong-Bock, "A Theological Reflection on the Economic crisis", in Pamela Brubaker and Rogate Mshana, eds., *Justice Not Greed*, Geneva: World Council of Churches, 2010, p. 206.
120 For a discussion of the importance of leisure for a holistic approach to life see Josef Pieper, *Leisure The Basis of Culture*, New York: The New American Library, 1963.

121 For a discussion of the feasibility of shorter work time for everyone see Bruce O'Hara, *Working Harder Isn't Working: How We can save the environment, the economy and our sanity by working less and enjoying life more.* Vancouver: New Star Books. 1993.

122 United Nations Development Program, *Human Development Report 1995*, Oxford: Oxford University Press, 1995, p. 97.

123 Sallie McFague, *Life Abundant: Rethinking Theology and Economy for a Planet in Peril,* Minneapolis: Augsburg Fortress, 2001, p. 109.

124 Herman Daly, *Beyond Growth: The Economics of Sustainable Development*, Boston: Beacon Press, 1996, p. 210.

125 Herman Daly, *A Steady-State Economy*, London: Sustainable Development Commission, April 24, 2008.

126 Michael Polanyi, op. cit., p. 12 and p. 9.