

Science for Peace

The Bulletin

September 2009

Message from the President of Science for Peace

Judith Deutsch

There seems to be two opposing trajectories in terms of knowledge: as blinkered leaders (people in positions of responsibility) obstinately make regressive, astonishingly narrow-minded and self-serving decisions and, as the major media become increasingly trivial and inane, the actual accumulation of crucial information exponentially expands. By crucial information I mean facts critical to human survival as well as deep analyses pointing to the contributing causes of breakdown and to the workable solutions.

As a case in point I will focus on recent extremely disturbing trends in Africa that are barely reported.

1. Land expropriation: On July 10, 2009, the UK Guardian (p. 12) reported that an area one-half the size of Europe's farmland was bought up in the past six months, primarily in Africa – the continent so often designated as a focus of population reduction because of food scarcity. The main buyers are South Korea in Sudan, Saudi Arabia in Tanzania, South Africa in the DRC (8m-hectares) to grow maize and soya beans, poultry and dairy. India has lent money to 80 companies to buy 350,000 ha in Africa. "At least six countries are known to have bought large landholdings in Sudan, one of the least food-secure countries in the world. Targeted are poor countries such as Cameroon, Ethiopia, Madagascar, and Zambia. Further, about one-fifth of the land deals were expected to grow bio-fuel crops. "Some of the

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world's largest food, financial and car companies have invested in land." Devinder Sharma of the Forum for Biotechnology and Food Security in India, predicted civil unrest: "Outsourcing food production will ensure food security for investing countries but would leave behind a trail of hunger, starvation and food scarcities for local populations. The environmental tab of highly intensive farming is devastated soils, dry aquifers, and ruined ecology from chemical infestation will be left for the host country to pick up."

2. GMOs: Also of concern is the move by the G8 to promote another green revolution in Africa. There is unclarity in the reporting about how much will be tied to promoting GMOs. From what I have seen, President Obama, Bill Gates, and Jeffrey Sachs are utterly uncritical of the first green revolution and there is unqualified support for GMOs.¹ "Britain is planning to quietly spend up to £100m on support for genetically modified crops for the world's poor despite not having allowed any of the controversial foods to be grown commercially at home. A new white paper shows the government is committed to dramatically increasing spending on high-tech agriculture in the next five years, much of which will be on GM crop research."² In this context, an African website "Voices from Africa" reports that the Monsanto GM-corn harvest massively failed in South Africa and that South African farmers suffered millions of dollars in lost income when 82,000 hectares of GM maize failed to produce hardly any seeds. "The plants look lush and healthy from the outside. Monsanto has offered compensation."³

3. Africom. Another ominous development is the establishment of United States African Command in October, 2008. Africom covers military operations in all African countries except Egypt.

1 See for example Jeffrey D. Sachs 2008. *Common Wealth: economics for a crowded planet*. Penguin Books: New York. Also, see the excellent critique in *Monthly Review: the crisis in agriculture and food*. July-August 2009. Vol. 61, No. 3.

2 <http://www.guardian.co.uk/environment/2009/jul/19/gm-crops-aid-uk-funding>.

3 www.digitaljournal.com/article/270101

The website lists three main missions: Operation Enduring Freedom Trans Sahara, the Combined Joint Task Force Horn of Africa, and the African Partnership Station (the Gulf of Guinea nations). The language and thinking is identical to US military operations in Iraq and Afghanistan: war on terrorism and counter-insurgency, links with Al Qaeda, the mixing up of military and humanitarian aid. And again, violence is attributed to tribal or sectarian conflict, not to resource exploitation by private interests.

4. Environmental refugees. Global warming now causes 300,000 deaths/year and the people of developing nations will suffer most severely.⁴ It is estimated that there will be at least 20 million climate refugees in Bangladesh. Clearly our capitalist, industrialized countries are criminal and yet the signs are already going up of our disavowing all responsibility -- closing borders, the increased racism (the resurgence of racist parties in the EU), entrenched delusions that we can continue in our way of life with some minor inconveniences (e.g. we'll drive smaller cars). Again, of great concern now is the move to differentiate environmental from political refugees. Will this strip environmental refugees of the protection and reparation that we owe to them?

5. Canadian mining companies: Canada has a very lengthy, highly incriminating history of exploiting African resources. For example, there is ample documentation of Canada's role in the current plunder and genocide in the DRC, especially through its protection of Canadian mining companies which are also supported by the World Bank. (e.g. the history of Anvil Mining/First Quantum in the DRC and its support by Joe Clark).⁵ Canadian investors benefit tremendously from the absence of human rights and labour standards, monetary deregulation, the lack of

4 June 5-11, 2009 *Guardian Climate Change Creates new 'global battlefield'*, pp.1-2.

5 Engler, Yves (2009). *The Black Book of Canadian Foreign Policy*. Fernwood: Vancouver. Toussaint, Eric (2006). *The World Bank: a critical primer*. Pluto Press: London.

oversight and accountability, and the prioritizing of wealth over human survival.

These points only touch the surface of what is disturbing about trends impinging on Africa. The long history of international exploitation in Africa continues to cause immense suffering almost throughout that continent. Responding to the African crisis ought to include paying our

ecological debt⁶ by greatly contracting our own energy use and by converting to a steady-state, or even a contracting economy in the direction of equalizing global wealth.

⁶ Andrew Sims. 2005. *Ecological Debt: the health of the planet and the wealth of nations*. London: Pluto Press.

The State of Global Food Production and Recommendations for the Future

Leslie Jermyn

Getting food:

Gathering: harvesting existing food sources without domestication or cultivation; includes hunting, plant gathering, fishing wild stocks

⇒ Whereas gathering food with no effort to domesticate or cultivate requires about 1km² per person, and the earth's surface is approximately 148 million km², even if we assume that all the earth's surface is equally capable of supporting humans (which it isn't), the global population limit is about 148 million without cultivation.

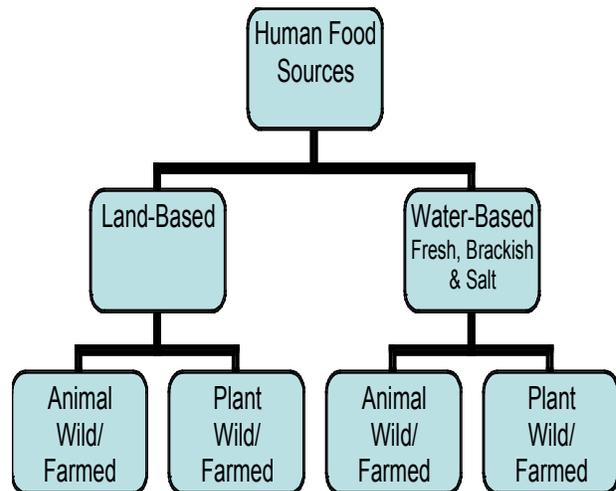
Cultivation: Managing the germination/conception and maturity of the species involved and sometimes includes hybridizing or genetic selection; includes livestock and fish rearing, and land and sea horticulture

Limiting Factors:

Hard:

- Capacity for land/water ecosystems to produce food over time (solar energy, soil fertility and structure, species' tolerance for culling; amount of land given to food uses at the expense of biodiversity etc.) – note this is fluid in any one place and especially so given global climate instability

- Capacity for land/water ecosystems to absorb wastes over time
- Energy available to gather or cultivate food (and transport or process it)



Soft:

- Dietary choices (culture, history, class)
- Geopolitical and local political conditions (war, political famines, agricultural subsidies)
- Overarching economic and government system (food as right vs. food as commodity for example)
- Availability and willingness of human labour to produce food

Essential Conditions for Sustainable Food Supplies:

Land-based: soil, light, water, non-farm habitats, integrated systems involving both animals and plants, biodiversity, renewable energy

Water-based: uncontaminated water, water flow, zones of limited human activity, various shore and coastal habitats for breeding and/or farming (deltas, mangroves, beaches, lagoons etc.), biodiversity, renewable energy

Contemporary Industrial Agriculture and Fisheries

Our contemporary food production system violates every principle of sustainable food production because it relies on non-renewable fossil fuels; uses more energy than it produces; creates unabsorbable quantities of pollution and waste; does not facilitate or even permit (in some cases) biodiversity or non-farm uses of land and water; destroys soil; destroys stocks of wild animals; prioritizes profit over human and non-human rights; perpetrates unnecessary violence on living things; is socially inequitable and has facilitated an unsustainable growth in the human population – it has permitted us to exceed any reasonable carrying capacity.

Some Facts:

10 units of energy are required to produce 1 unit of unprocessed food energy in the North American/European diet; this ration rises to 1000:1 in the case of processed foods; another way of seeing this is that if we have to replace fossil fuel energy with human labour in the current system, one day's food would take 111 hours of human work to produce

- Nitrogen fertilizer and most pesticides (insecticides, herbicides) require the use of fossil fuels to produce
- In the U.S. (comparable in some ways to Canada and the country for which the most research is available), in 1994, 400 gallons of

oil/year were required to feed each person not counting the oil required to package, ship, refrigerate or cook the food

- From 1945-1994, energy input to agriculture has increased 4X while yields have increased only 3X – since then, energy input has continued to increase while yields have stabilized
- Globally we are losing 1mm of agricultural soil per year which is 10-30X the rate of replenishment – it takes approximately 500 years to produce 25mm (1 inch) of soil
- Crop yields decline exponentially as soil thins, not arithmetically
- Mechanical plowing and harvesting destroys soils by breaking down soil structure and compacting it so that essential life forms can't thrive; pesticides, fertilizers and constant irrigation add to soil degradation by killing essential life forms and salinizing the soil
- We have currently occupied all reasonably arable land; the only areas remaining are marginal and farming them has disastrous consequences as well as only short-term gains (i.e. tropical forests, semi-deserts)
- Global capture fishing has plateaued
- About ¼ of fish stocks are over-fished and have collapsed; about ¼ are 'under-exploited'; and ½ are being fished at peak rates
- Since the 1970s, we have expanded fishing to deep seas to make up for collapsing coastal fisheries but these species show an even greater susceptibility to over-fishing due to their larger size and longer maturity rates
- All deep-sea fishing relies on fossil fuels for transport and refrigeration and over half the global fishing fleet is fossil fuel-powered
- Aquaculture has increased dramatically but at least some of it relies on fishmeal and oil from wild stocks for food supplies (the catching and processing of which relies on fossil fuels);

Continued on page 12.

Hope for a Nuclear-Free World

By Phyllis Creighton

Photographs of bombed Hiroshima and Nagasaki and victims' art in City Hall rotunda, with posters, paper cranes, and peace tables in Nathan Phillips Square, signalled the Toronto commemoration on August 6 of the 1945 atomic bombing. Yakudo Drummers and the men's Northern Lights Chorus drew some 300 people into the evening's program on NPS, organized by the Hiroshima Day Coalition (HDC) to focus on hope. Music returned later, with a children's peace choir and the Raging Grannies both feisty and haunting songs.

Mayor David Miller himself brought encouragement, born of his experience in Britain in



Mayor David Miller delivers the official proclamation for Hiroshima Day.

World War II, and read his Proclamation of Hiroshima Day. Noting threat of use remains all too real, it declared that Toronto joins cities and mayors all around the world in supporting the Mayors for Peace (MfP) 2020 Vision Campaign and the commitment to peace and a world free of nuclear weapons.

As MC, I called people to think about the NPS Peace Garden, its flame from Hiroshima, water from Nagasaki, its unfinished shelter symbolic of the need to build peace, inviting them to remember the horror of nuclear attack and the message "Never again!" that we must give governments and help people understand. Toronto has an anti-

nuclear history of the city, I noted, and we are in great peril: the Doomsday Clock stands at five minutes to midnight. Ours is the most multi-cultural city on Earth. So we should urge our friends around the world to help build the political momentum to achieve the nuclear-free world that US President Obama says is his goal. Drawing attention to UN Secretary-General Ban Ki-Moon's five-point disarmament plan (*Guardian*, August 3), I said the HDC brings us together to tell the politicians "Yes, we can!"

After Joe Ohori spoke of his experience in the Hiroshima bombing, hibakusha Setsuko Thurlow, CM, read Hiroshima Mayor Tadatashi Akiba's proclamation. Akiba had told the 40,000 gathered in that city's Peace Park: "We refer to ourselves, the great global majority, as the 'Obamajority', and we call on the rest of the world to join forces with us to eliminate all nuclear weapons by 2020. We have the power....Together, we can abolish nuclear weapons. Yes, we can." Setsuko led us into a minute's silence.

In his keynote address, Bruce Cox, the executive director of Greenpeace (Canada), speaking about nuclear power and weapons, underlined that "its greatest drawback is simply us – human beings." As examples of human fallibility, he cited nuclear weapons lost, fuel rods missing, and forgotten, lost nuclear waste sites. Al Gore, during his eight years as US vice-president, had, Cox said, noted that every nuclear weapons proliferation issue the US dealt with was connected to a nuclear energy program. Greenpeace, with the European Renewable Energy Council and the German Aerospace Agency, has developed a global energy blueprint by which climate change targets and growing energy demands can be met from now to 2050. "If we believe it is human to err, then why would we pursue a nuclear agenda?" We should shake off the nuclear cult, with its cost overruns and unwinnable arms race. "A nuclear free future ... is possible, practical and economical. Time to redouble our work for it, to build a society that is free from nuclear threat," he urged. In thanking him, I noted global attempts at nuclear energy renaissance and the potential for every nuclear

power plant to be an atomic bomb factory.

Speaking for Veterans Against Nuclear Arms (VANA), Mac Makarchuk, who was an Ontario MPP, told us we need to reach our members of parliament, find out their views, and make sure they know our abolition commitment. Dr Vinay Jindal, who represents Physicians for Global Survival (affiliated with International Physicians for the Prevention of Nuclear War) on HDC, set out action initiatives we can engage in:

- the MfP campaign Cities Are Not Targets (CANT) and recruiting Ontario mayors to join MfP;
- IPPNW's International Campaign to Abolish Nuclear Weapons (ICAN), with a petition on line for signing (see www.pgs.ca), plus a model abolition treaty, Securing Our Survival, to support;
- Building public pressure to ensure that the nuclear Non-Proliferation Treaty (up for review in May 2010) achieves the abolition it was meant to
- Pressing our mayors to fully represent us as MfPs
- Signing the Global Zero Declaration (www.globalzero.org).

"We are the hope," he said – "one global voice to push the world harder than ever towards nuclear disarmament."

After the Yakudo Drummers awed us again, Roberto Verdecchia told us about the coming nine-month World Peace March whose torch was lit from Hiroshima's flame on August 5, and invited us to find our inner flame and be the peace we seek. Asking people to move with their lanterns through the Peace Garden, forming wishes and prayers to send off with them, I called on a flutist to lead us out. His haunting melodies on Japanese wooden flutes inspired us. The magic of colours floating across the pond in the square mirrored the lanterns drifting past the famed Atomic Dome in Hiroshima with grief and wishes that we must honour by bringing to fulfilment the hope of abolition.

Where are our Peacekeepers?

Walter Dorn and Peter Langille

Peacekeepers' Day in Canada, celebrated each year on Aug. 9, was created to recognize the high level of professionalism, dedication and courage of Canadians serving in faraway places in the cause of peace. For decades, Canada was the world's number one contributor of UN peacekeeping troops. Until 1996, this nation remained in the top 10. Unfortunately, the country now ranks 52nd. While UN peacekeeping is now at an all-time high, deploying more than 82,000 troops worldwide, Canada's contribution is a mere 65 soldiers.

Asking a simple question, "Where have all the Canadian peacekeepers gone?" yields a simple answer. They have shifted to NATO, where they are not doing peacekeeping but are conducting counter-insurgency operations as an integral part of the American war on terror. With more than 2,700 Canadian troops deployed in southern Afghanistan under U.S. and NATO command, the Canadian Forces are clearly in danger of becoming a single mission military, with one predominant and all-consuming theatre of operation. In abandoning UN peacekeeping operations, Canada is forcing developing countries to carry the heaviest responsibility for providing urgently needed troops to many troubled regions of the world. At the UN's headquarters in New York, Canada does not provide a single military officer to the Department of Peacekeeping Operations, which guides some 17 missions worldwide.

Canada could renew its peacekeeping role by providing several hundred troops directly to UN operations, including the missions in Haiti, Lebanon, Darfur and the Democratic Republic of the Congo. As a country rich in peacekeeping heritage, Canada could support the United Nations in many other ways besides boots on the ground; for example, through communications and reconnaissance technology, specialized training and joint exercises with other peacekeeping nations. Canada's Coyote reconnaissance vehicles and un-

manned aerial vehicles could help the UN do early warning of conflict outbreaks, secure UN mission staff and protect vulnerable populations.

The Canadian drift away from peacekeeping has occurred in the absence of an overall strategic policy direction from the government. After years of waiting for a comprehensive strategy on how Canada can contribute to world security and develop its armed forces accordingly, Prime Minister Stephen Harper and Defence Minister Peter MacKay announced in May 2008 the "Canada First Defence Strategy." The document and as-



sociated speeches were widely criticized as little more than announcements confirming funding commitments.

More recently, Canada and other governments further weakened UN peacekeeping by shutting down SHIRBRIG, the multinational Standby High Readiness Brigade for United Nations Peace Operations. Canada helped pioneer this innovation starting in 1995, following the Rwandan genocide. SHIRBRIG enabled Canada to participate in a multinational division of labour for UN peacekeeping – an arrangement so promising that the government announced Canada would take a lead role. Canada was to provide a CF standby unit of approximately 800 troops, as well as to staff an operational headquarters. However, this was not delivered. Furthermore, last year Canada and the 15 other countries voted to cease all SHIRBRIG activities, a decision that took effect on June 30. The organization's termination represents another failure of Western countries to live up to their peacekeeping commitments and their responsibility to protect.

As Canada looks ahead to the 2011 deadline to draw down our military commitment in Afghanistan, a vigorous debate is underway on this country's future military purpose and priorities. Historically, Canada's interests have been divided between (1) working closely with the U.S., through alliances like NATO and NORAD; and (2) working to build a secure multilateral order, through a myriad of engagements at the United Nations, including UN peace operations. But in recent years our historic support for UN peace operations has waned, while the trend toward integration with the U.S. military and U.S. priorities has increased. Political leadership is required to restore a balanced Canadian military policy, one that includes a significant commitment to peace operations.

In tribute to the sacrifices that our soldiers have made for service to humanity, let us indeed celebrate Peacekeeping Day in Canada. But as we begin to spend billions of dollars to make our military forces more robust, we must remember that UN peacekeeping urgently needs Canadian support, and that a significant contribution to the UN by this country would give Canadians further cause for pride and future celebration.

Walter Dorn is an associate professor of defence studies at the Canadian Forces College and the Royal Military College of Canada. He is currently chairman of the Canadian Pugwash Group, and serves as a consultant to the UN and is a council member of the World Federalist Movement-Canada.

H. Peter Langille directs *Global Common Security 13* in London, Ont., where he specializes in UN peace operations, peace and conflict studies, as well as independent defence analysis.

Good News

Costa Rica now has a Ministry of Peace and Justice adding to the same move by Nepal and the Solomon Islands.



Meeting with MP Carolyn Bennett

A small group of her constituents, organized by JustEarth, and including members of Science for Peace, went to a private meeting with Carolyn Bennett, 2 July, on climate change. Jean Moffat, speaking for the group, outlined its key concern as the lack of action of the present and past Canadian Governments to address climate change and ensure that Canada live up to its Kyoto commitments, and to turn that past failure into leadership in the next round of negotiations at Copenhagen this year. She thanked Carolyn on behalf of the whole group for signing the KYOTOplus petition that concerned citizens have been trying to get Liberal Party members to sign, and asked Carolyn to persuade other Liberal members to sign on. Carolyn's response was gratifying, and indicated that she shared the group's deep concerns.

Other questions discussed included: international action (fulfilling Kyoto obligations, action to protect rainforests); Michael Ignatieff's recent statements on the tar sands, support for this to be framed within an environmental context; the challenge of articulating a coherent policy, given specialist silos within the public service and within caucus; Michael Ignatieff's articulation of the goal for Canada to be "the healthiest country in the world" by 2017 (May 2009 Liberal Convention); federal "subsidies" to oil companies in contrast to minimal support for other energy sources; the need for evidence-based (as opposed to ideological) policy development; incentives for environmentally positive energy alternatives; and research as a federal role in renewable energy.

In answer to one of the questions, Carolyn stated that, yes, achieving the goal of making Canada the healthiest country would indeed involve poverty reduction or elimination, and that the health objective had been agreed at the Liberal Convention in May.

The meeting promised to give rise to further

contact with Carolyn, and was overall most encouraging, especially on climate change. But some of us came away wondering how the public could hold a Liberal Government, should one be elected soon enough, to the promise of making Canada the world's healthiest country by 2017, devoutly to be wished as this is.

Peace and Protest in the UK

From Peace News

- On June 21 the Uranium Weapons Network was launched as part of the Campaign Against Depleted Uranium
- A bridal die-in was held to commemorate the bombing of a bridal party in Afghanistan, one of several bombings by US and NATO forces.
- Trident Ploughshares blockaded four gates at Aldermaston's Atomic Weapons Establishment to protest the new nuclear weapons facilities.
- Protestors from Manchester's Plane Stupid formed a human wheelclamp around a business jet.
- About 800 people attended the Carnival Against the Arms Trade at the EDO Brighton arms factory.
- Every Tuesday the Campaign for the Accountability of American Bases meets to protest at the spy base at Menwith Hill
- A Scottish Arms Conversion Agency is being suggested to demand that savings from not replacing Trident submarines go to local civilian jobs.
- In June "Boiling Over: Scotland's Gathering for Climate Action" was hosted in Glasgow before the August Summer Camp for Climate Change, one of many peace camps.
- The Darby peace camp, set up opposite the Rolls Royce factory which makes power systems for nuclear submarine, continues to demand the factory be converted to peaceful uses.

- Also this summer was the launch of the Meat-Free Monday initiative supported by Sir Paul McCartney.
- A Coal Caravan toured the UK, blockaded a coal conference and invaded the offices of a construction company.
- In June the House of Lords ruled the use of secret evidence breaches human rights legislation. However Parliament vetoed a war crimes tribunal for Blair and Browne.
- People exposed to nuclear tests in the Pacific in the 50s can now sue the government for resulting ill health.
- In most cases some protestors were arrested, tried in Court, fined and some were jailed. Many were members of the venerable Campaign for Nuclear Disarmament.
- For more information read “Faslane 365: A Year of Anti-Nuclear Blockades” ed. by Angle Zelter.

Our Annual General Meeting



This account is a summary of the highlights of the meeting. The full minutes can be obtained from the Science for Peace office.

On Saturday, May 23 about 25 members of Science for Peace gathered at Wilson Hall, New College, University of Toronto for the 2009 AGM. President Judith Deutsch presided.

She thanked the members who had actively participated in Science for Peace over the last year. The issues in 2008-9 included climate change and social justice, which are interconnected. She also pointed out the corruption of research in universities and the onslaught on knowledge in academia. She reviewed our involvement with other groups on issues such as water, mining, Omar Khadr and Bhopal. She referred to the impact of our present economic system and the fact that we ought to be moving to a no-growth economic model. We had made a presentation to the Standing Committee

on Science, Technology and Industry. She pointed out the dangers of the entrenched structure of large multinational corporations.

A general discussion followed on getting new members, reactivating former members and sending information to students and the Graduate Student Union about SfP and our activities. A Human Rights Working Group has been proposed at a Board meeting this year.

Reports from Committee Chairs and Members

Global Issues Project

Derek Paul

The Global Issues Project recorded another year of progress, having sponsored a roundtable on fresh water in November 2008. The committee, which numbers eleven, is the same as it was at the time of the last Annual General meeting of Science for Peace, though the advisory group has grown, and now includes Danny Harvey and Dick Peltier, both of them authors of IPCC documents, and Ken MacKay, formerly a GIP committee member, and also now serving on the population committee of the GIP. Recent additions to this list include Professor Colin Soskolne, professor of epidemiology and senior editor of *Sustaining life on Earth*. On the committee itself, while no new permanent members have been added, a host of new faces have appeared, some regular at our meetings and the others occasional, several participating on the planning committees.

The project is now progressing on two fronts, having set up planning committees on population and on “no growth.” The latter arises from the often stated impossibility of indefinitely continuing increases in economic output and human population, and was triggered by the timely appearance of Peter Victor’s book last November: “Managing without Growth: Slower by Design, not Disaster.” At the same time, the population committee is starting to include food and agriculture in its deliberations.

Our brochure (see SfP’s website) invites all

and sundry to get in touch with either of our contact people. In addition to not refusing anyone's participation at our meetings, we have taken the trouble to invite specific people from time to time. The trend is upward in these numbers, and it is obvious that it must be so. The number of crucial issues is large (sixteen, depending on how one lists them), and ideally one should be able to handle them all simultaneously, but this will require a much larger committee than we now have.

Roundtables

The 2008 Roundtable on Freshwater was particularly successful, in that the twenty-odd water experts were essentially in agreement on all the immense gamut of technical matters discussed, which ranged far beyond Canada's borders. In addition, Oliver Brandes (professor at University of Victoria) put together a statement of policy suitable for any Canadian government, based upon the findings of the first day of the Roundtable, and this statement was discussed on the second day and edited into a "Declaration on Freshwater," which has now been translated into French. It is important that the Declaration was unanimous, that is, all expert members of the Roundtable and all the GIP committee members present signed on to the Declaration.

The Declaration of Freshwater is a document SfP should be very proud of. Though highly technical, it contains within its tightly phrased two pages, comprehensive policy for every level of government on water issues within Canada, and has the potential to be applied elsewhere as well. Furthermore, it should stand the test of time. Currently it has been circulated to all federal MPs and many Ontario MPPs. The Roundtable on Freshwater also gave rise to an op-ed article and has led to more publicity and another op-ed article since last year. A measure of the success of the roundtable is that the water experts have stayed with us; that is, they still communicate and contribute to the follow-up.

The full report is available from the SfP office.

Media Working Group

Rose Dyson

The Media Working Group aims to bring together a variety of expert and influential people who are concerned about how the media impact on SfP objectives of peace, human rights, justice and the creation of an environmentally sustainable future for all peoples. The media have an enormous influence on the attainment of these goals as "action-filled thematic ,ethods of communication and amusement are accelerating trends toward a culture of violence directly at odds with justice, peace and environmental sustainability. Rose has had many chapters and articles in publications and founded C-CAVE (Canadians Concerned About Violence in Entertainment).

Reports from Members

Paul York reported on two conferences held at the University of Toronto on Climate Change and on Mining. He noted some federal legislation involving economic sanctions for mining companies who violate human rights in countries where they operate and rewriting of the Ontario Mining Act.

Peter Basedow reported on a meeting with the head of the Office of Energy Sustainability at the University of Toronto without effect on present policy. It is hoped to establish an umbrella student organization for environmental groups at the university. Similar activity at the University of Guelph hopes to propose a resolution to the Senate on carbon reduction.

Phyllis Creighton reported on her work with Amnesty International on SfP letterhead especially on capital punishment. She wrote to President Obama about Omar Khadr. She is the SfP representative for the Hiroshima Day organization and the Canadian Network for Nuclear Abolition. She helped organize another successful commemoration at City Hall this year.

Metta Spencer is organizing an event "Zero Nuclear Weapons - A Forum. Metta Spencer (See Upcoming Events)

Mines Action

Margaret Back

SfP is a member of the Mines Action Canada Coalition. Ten countries have met the deadline for removal of land mines. Canada is a major donor.

A major success this past year internationally has been the achievement of a comprehensive ban on cluster bombs. To date 96 states have signed and 7 have ratified this treaty.

Nominating Committee Report

Brydon Gombay

The following have agreed to stand as **Officers**:

Judy Deutsch – President

Margrit Eichler – Secretary

Chandler Davis – Treasurer

Life Members: *Terrel Gardner, Helmut Burkhardt, Hanna Newcombe*

24 directors were **renewed** for 2009-2011.

Wendy Devine and *Hershel Stroyman* have **resigned**. Hershel was a longtime valued member. Wendy's service as Treasurer from 2007-8 is particularly appreciated.

The **new directors** are: *Karl Brozowski, Michael Keef-er, Blair Kuntz, Zannah Mae Matson, Lynn MacDon-ald, Dieter Misgeld, Diana Moser, and Jim Deutsch*.

The office of Executive Vice-President needs to be filled, and we need a Membership Secretary.

Treasurer's Report

Derek Paul

The Board agreed to deficit financing although Derek stated it is not his preference.

Including all our accounts SfP currently has almost \$50,000 at its disposal but this will disappear in less than five years without major fundraising. A fundraiser whom Derek consulted said that this is not a good time for major fundraising — we should wait until next year. Derek asked the members of SfP to try to get their minds around these facts.

Membership

We need to replace the older generation of scholars with younger people. He recommended that the highest priority in the coming months be devoted to retaining the current membership, to obtaining the fees due from members, and to consider raising the fees at the next Annual General Meeting which have not been raised in many years. And, of course, increasing our membership.

Peter Westra, our accountant (and Board member) presented a balance sheet for the calendar year 2008, which was accepted by the members present.

The Franz Blumenfeld Fund

Currently the capital stands at \$50,000 and there is an account of \$3,981 for making awards. The Blumenfeld Fund is guided by two committees, of two people each: the President and Treasurer of SfP for financial matters (investing and fundraising) and setting the rules for the second committee which deals with the awards. This committee consists of Frank Cunningham and Julia Morton-Marr. Two awards were made since the last AGM: \$800 for the Department of Peace initiatives and \$500 for the Canadian Voice of Women for Peace.

Analysis of donations to Science for Peace in 2008:

Members: \$17,632.74

Non-members: \$6576.00

Total: \$24,208.74.

Average per member: \$104.84

Earmarked for the Global Issues Project: \$2,565 from members and \$6,500 from non-members.

Earmarked for general purposes: \$15,143.74.

The State of Global Food Production *from page 4.*

- There are no sizeable areas of land left to significantly increase large-scale aquaculture and the growth of this industry has likely peaked
- Meat consumption is increasing but meat production absorbs huge amounts of fossil fuel energy for feed production, transport, processing, pharmaceuticals etc. (1calorie of beef protein costs 78 calories of fossil fuels; pork = 1:35; poultry = 1:22)
- Agri-business profit margins have required the consolidation into ever larger, mono-species operations which then require ever larger inputs of fertilizers, pesticides and medicines (for animals) which costs ever greater quantities of fossil fuels



There are many more relevant facts and a fascinating history to recount in terms of the so-called ‘progress’ we’ve made in farming in the last 200 but especially 50 years. Anyone who is interested in learning more about how we have farmed our way toward famine would be advised to read up on the Green Revolution and its consequences in the Punjab and Indonesia. As well, I haven’t trotted out the usual stats about over-consumption among some sectors of the global population at the expense of the 1billion under-fed.

Solutions

GMOs:

Genetically modified organisms, particularly of staple crops like soy, corn and other grains (canola etc.), are touted by the corporations who designed them and the scientists in their employ as the saviours of the human race because they will increase crop yields while reducing reliance on polluting pesticides. Apart from the obvious danger of introducing new species to the planet

and the absurdity of making them ‘terminator’ species (ones that can’t reproduce themselves) when it comes to food, the claims have not been borne out in research situations.

The few independent trials that have been done on GMO crops suggest that they do require fewer pesticides in monocrop planting for the first few years but then as pests adapt to them, they soon require the same amount as non-GMOs. Indeed, Round-up Ready crops may receive more pesticide simply because it’s easier to apply and

over-use when the crop is resistant to it. GMOs do not reduce the need for fertilizers or irrigation.

There isn’t clear evidence that these crops produce more food than their non-GMO versions. Indeed, in some cases (soy) they may yield less.

We have nowhere near enough data to judge whether GMOs have a health consequence for humans or animals but we do know that once they are planted in an area, their capacity to infect and cross breed with non-GMOs extends quite far – in other words, they are not containable as their manufacturers would claim.

Finally, GMOs are patented commodities that are created to produce a profit. They cannot be part of any global movement to encourage family farming (see below) and local food provision since they are already replicating the effect of Green Revolution hybrids. To wit, having to pay for seeds and expensive inputs forced a concentration of land ownership putting many small farmers off the land and into abject poverty. GMOs are repeating that pattern in the global south (search the example of Bt cotton in India). GMOs should not be allowed to be part of our food future given their limited ‘advantages’ and largely unknown disadvantages.

Organic Land Farming:

There are different versions of organic out there. I would prefer to think here about absolute organic farming which requires the substitution of all fossil fuel inputs (fertilizers, pesticides, mechanical irrigation) with other approaches.

One of the key challenges to replacing fossil fuels in organic farming is fertilizers (currently made by burning natural gas). Crop rotations using legumes that fix nitrogen from the air into the soil and leaving land fallow can work but do not seem to regenerate nitrogen fast enough for an intensive cropping system. Integrated farming, combining animal husbandry and horticulture, is far more effective as manures are high in nitrogen. One can surmise that using human manures would also enable a higher intensity use of the land (as in China and India for hundreds of years).

In terms of yields, organic farms have matched and in some circumstances out-produced industrial farms. But the trick here is that organic farming requires much more intensive human labour and management so that a single farming family can only work a much smaller plot of land if they're doing it organically. The extra labour is required for such things as weeding, pest management, animal husbandry (herding and pasturing animals), intercropping (planting different species together), harvesting by hand and observing the land to make necessary adjustments in crop rotations etc. As well, sustainable organic farms in temperate and tropical regions require biodiverse ecosystems. In other words, there needs to be non-farm areas like bush/scrub and forest to host a diversity of species, some of whom (birds, wasps etc.) act as pest-managers.

The advantages to non-synthesized methods are long-term:

- Using manures and compost builds soil fertility over time so that the soil actually improves under organic management rather than deteriorating
- Improved soil structure reduces the need for irrigation as good soils hold more water

- Healthy soils make healthier plants that are less susceptible to pests so that pests can be tolerated
- Intercropping and crop rotation, in contrast to monocropping, naturally limits food crop predators since they are not assured of their favourite foods every year
- Organic produce would appear to have more nutrients than industrial produce and of course, doesn't expose the consumer to nasty chemicals

No-till Farming:

No-till methods are gaining support. This is simply the practice of leaving last year's crop stubble on the land and planting into it rather than plowing it under every year.

Aquaculture:

Fish-farming on land or along coastlines will likely be part of our food future, but it will never replace the 80-90 million tonnes of capture fish we currently consume (about 75% as food and 25% as fishmeal and oil fed to other fish or animals). Capture fishing (at sea) has plateaued and will likely decline as oil prices and availability limit the fleet we can power and as we deplete wild stocks, and inland, as competition heats up for freshwater uses (agriculture, hydro power, sanitation).

Aquaculture (AC) is also limited by the following factors:

- Limited unused land area for expansion though South America and Africa could still expand here
- Availability and cost of fish feed – those species reliant on fishmeal from wild capture may not be viable
- Limited ability to intensify production due to the real risks of epidemic diseases among the animals (White Spot in shrimp farming is a great example of this) and the rising costs of pharmaceuticals
- Expensive and then reduced fossil fuels for pumping water which is the main energy requirement for AC

Consequences

Here are some of the more obvious and profound consequences of our food future:

⇒Labour: We will have to replace the energy derived from fossil fuels with human and animal labour. By some estimates, this will require about 60% of the Canadian (or any population) to be dedicated to farming – that means 5 million new family-sized farms created in the near future complete with farmers capable of doing the job. By extension then, training the next generation as money-managers and marketing experts is a waste of time. In addition, it is very likely that if we are to retain urban settings, most urbanites are also going to have to work at food farming on a small scale and spend more time processing raw ingredients that no longer arrive with 1000x the energy embodied in them than they contain in calories. This speaks to the changing nature of work in a post-industrial society.

⇒Diet: The Canadian diet will have to change substantially for many reasons. Obviously, all those tasty long-distance foods will disappear or become luxuries reserved for special occasions (tropical fruits and vegetables, fresh seafood for most of us, many spices and non-food goods like coffee and tea etc.). The diet will at first simplify but likely then diversify again as people re-discover foods that have fallen into disfavour (turnips, cabbage, leafy greens, heritage varieties etc.) though current levels of variety are unlikely to be seen again. Super-processed foods will slowly disappear as they become too expensive for most people. This is undeniably a good thing for our health but if it isn't accompanied by other measures to ensure a living wage with fewer hours of work, the stress on the family, and particularly on women, will likely cause social upheaval and/or negative health outcomes (stress, malnutrition etc.). The future is NOT vegan. We will have to combine animal and plant farming to make our farms viable and we will have to use local animal products (mostly eggs and milk rather than meat)

in our diet to survive. Finally, food will become more expensive and take up much more of our income or tradable surplus.

⇒Land Use: We will have to radically alter our land use priorities to conserve remaining farmland and reclaim land that has been turned over to other uses (big box malls, suburbs, golf courses, rooftops, parking lots etc.). Much of this 'land' does not contain viable soils for agriculture (and some is contaminated) and will have to be remediated. This may provoke one or both of the following settlement patterns: we concentrate settlement in urban and semi-urban areas to maximize productive spaces and/or we disperse into rural areas to be closer to food sources. This will really depend on what transportation options remain for food to reach urban areas.

⇒Population: This is the kicker. Intensive, integrated organic farming may support 2 billion people worldwide but that's it. As fossil fuels peak (some say they already have) and then decline in availability while rising in price, food as we know it is going to become very expensive and eventually ungettable. This is likely to play out in the next 80 years so that population reduction is imperative if we are to transition to a sustainable future in a humane way. We therefore need negative reproduction rates now. [Editors note. Currently the population replacement rate is 2.1 children per woman, but this will decline as life expectancy increases. Therefore it is clear that the population replacement rate must fall to a lower value if a sustainable, no-growth population is to be attained.]

⇒Politics: Because we are still going to have to feed some people using fossil fuel inputs to sustain yields of staple grains into the near future, we need the political will to recognize that fossil fuels must be diverted from transportation and industrial uses (which together account for 67% of consumption) to food production and transportation – high levels of food processing will also have to stop. Concurrently, we will have to begin to transition land use to sustainable farming and

make hard decisions about how much land and water can be spared for energy production and housing over food production.

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The Seventh Decade: The New Shape of Nuclear Danger by Jonathan Schell.

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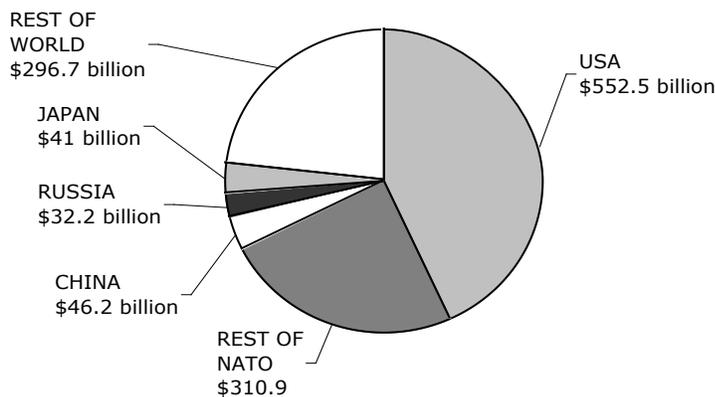
The Catastrophic Economics of Nuclear Power by Harvey Wasserman.

This Time is Different: Eight Centuries of Financial Folly by Carmen Reinhart and Kenneth Rogoff. (forthcoming)

Editor's Note:

I have not read all of these books but they seem very interesting.

WORLD MILITARY SPENDING 2007
Global Total \$1,279.6 Billion US



In 2007, total NATO spending (including Canada at \$18.5 bn) accounted for more than two-thirds of the world's military spending.

The annual budget for all UN peacekeeping in fiscal year 2007-8 was about US\$6.8 billion, which is equal to approximately one half of one per cent of global military spending.

SOURCE: IISS, THE MILITARY BALANCE 2009

Upcoming Events

On September 21 Toronto will mark **Peace Day** when the United Nations will launch its abolition of nuclear weapons initiative. **The 25 anniversary of our Peace Garden** will be celebrated then too.

September 21-26, **Earthcycle** pro-environmental week at the University of Toronto will feature the following Science for Peace events:

- Monday, September 21 from 3 p.m. to 5 p.m. lecture on **"The Corporatization of the University"** with Prof. John Vallea at South Dining Room in Hart House
- Thursday, September 24 from 7 p.m. to 9 p.m. lecture on **"Climate Change & Psychological Barriers to Change"** with Judy Deutsch and Prof. Danny Harvey at International Student Centre, 33 St. George Street, Cumberland Room

There will be also other interesting events during the Earthcycle week, such as **"Carbon Capture and Storage: False Hope or Climate Change Salvation"** on Wednesday, September 23 from 7 p.m. to 10 p.m. in McLeod Auditorium, Medical Sciences Building (2158), 1 Kings College Circle. For full program, see www.earthcycle.ca, or contact Pieter Basedow or Science for Peace office.

Saturday, September 26, **"Environmental Action: Building on Success"**, a teach-in from 10 a.m. to 4 p.m. at the Canadian Native Centre, 16 Spadina Ave. (near the Spadina subway stop), to celebrate the 25th anniversary of the International Institute of Concern for Public Health. Dr. Rosalie Bertell is among the notable speakers.

Sunday, September 27, a **protest and rally of the Cottagers Against Uranium Mining** will take place at 12 noon at Queen's Park.

November 13-14, **"Zero Nuclear Weapons – A Forum"** in City Council Chambers of Toronto City Hall, 100 Queen St. W. Preliminary program:

- Friday, November 13 at 7-9:30 p.m. **"We Are at a Turning Point"**.
- Saturday, November 14 at 10:00 a.m. – 12:30 p.m. **"Surmounting the Obstacles"** and 2:00 pm – 5:00 pm. **"Arousing and Sustaining Political Will"**

The keynote speakers are Jonathan Schell, noted author on nuclear abolition, and Anthony Carey, British High Commissioner to Canada. For more information, go to www.zeronuclearweapons.com Contact Metta Spencer.

December 7-18 officials from 200 countries will negotiate the next **Climate Change Treaty** in Copenhagen.

Reminder!

Science for Peace depends on its members for funding by membership fees and donations. Please keep your membership in the organization renewed. Please encourage more people to join us.

The Bulletin is published four times a year by Science for Peace. The articles in The Bulletin are the opinion of the writers and may not represent the views of all our members or the editor. Like Science for Peace in general, The Bulletin encourages a vibrant dialogue on important topics.

This number of The Bulletin was edited by **Shirley Farlinger**.

The Bulletin has been printed on 100 % recycled paper.