
Ethics, Policy, Carbon Credits

PANEL DISCUSSION AND Q&A

MODERATOR: JILL HOBBS

*University of Saskatchewan
Saskatoon, Saskatchewan*

PANELISTS:

MURRAY FULTON

*University of Saskatchewan
Saskatoon, Saskatchewan*

RICHARD GRAY

*University of Saskatchewan
Saskatoon, Saskatchewan*

DARRELL CORKAL

*Agriculture and Agri-Food Canada
Saskatoon, Saskatchewan*

Murray Fulton: We heard from Gordon McBean about the importance of policy and what can happen if there is uncertainty about it. Benjamin Gramig then talked about some of the important things to consider as we design policy specifically on economic factors—some of the costs and bureaucratic aspects likely to be entailed. Harold Coward gave us some things to think about in terms of ethical considerations that might go into a policy decision. I'd like to say comment on the meeting in December in Copenhagen that has been mentioned, at which an attempt will be made to come up with a new international framework for dealing with climate change. It's particularly interesting to think about Copenhagen occurring when the world is going through a major financial crisis. Debates and discussions are going on around what should the economic order look like; people are questioning capitalism in the twenty-first century. There's a very interesting article by Joseph Stiglitz, the Nobel Prize winner, in the July 2009 issue of *Vanity Fair*. Stiglitz says that there is a danger that this economic crisis will encourage protectionism. More importantly, he suggests that we need to look back at some of the policies that have governed the international monetary system over the past 30 or 40 years, and see how it was organized and in whose interest it was organized. He concludes that the developed world—and, in particular, its large national institutions—have been the primary beneficiaries of the international monetary system.

I'll use this as a jumping off point to talk about Copenhagen and subsequent meetings, and what we will see in terms of international climate-change policy. If we can take a lesson from the financial system, I think that greenhouse-gas policy will be drafted in a way that is going to benefit certain groups and it's interesting to think about who those groups might be. I suspect that they will include large energy companies. I expect that some of the larger agricultural biotech firms will also be among the players. We also need to think in terms of countries; are we witnessing a period in which the influence of the West—particularly of the United States—is being lost to other countries, in particular India and China. Will they put their stamps on this new policy environment in a way that fundamentally changes things? One of the speakers mentioned that developing countries want to “stick it to” the West for their policies over the last 20 or 30 years, and my guess is that, for the most part, they will have difficulty doing that. However, I also suspect that countries like India and China will play a role in a way that we haven't seen before. The current economic crisis is one of the ways by which they will be able to get their foot in the door

Richard Gray: This issue of forming policy in the area of greenhouse gases will not only be a challenge in the short run, it will be a dramatic challenge in the long run. We are a long way from where we need to go. I'll raise two issues. There's a lot of interest in cap-and-trade systems amongst the large emitters. This relates to Murray's question; if, in fact, these large final emitters are allocated permits, they can actually profit and make higher returns on these systems. It's not necessarily an imposition. If they have to purchase permits they are going to be worse off. If they are given their allocations they can actually benefit from these systems. What's interesting with the cap-and-trade system is that consumers are generally left out of the picture. The refiners, for example, would have to have permits for the energy they consume in refining gasoline. But most of the energy is still left in the gasoline, and the consumers themselves are the ones who are going to have to make the decision to use less gasoline. I just came back from Europe. The price of gasoline is double what it is here, which equates to a \$200-per-ton carbon tax. It's been that way for a long time and you can see some differences in the systems. They use energy more efficiently, they use public transportation more, and cars are more efficient. On the other hand, the differences in the systems are not enormous; conservation is also needed there. We have tremendous opposition to any kind of carbon tax. People believe in reducing greenhouse gases, but they resist paying some of the price of getting there.

Just a note on carbon sequestration: I think it is important to think about options where we don't treat carbon sequestration in pools as necessarily permanent. The political and economic realities are that contracts just don't go out that far, and probably too much risk is implied in a contract that supposedly goes out that far. However, there is still value in storing something for a period of time and, rather than view it as purchase of permanent storage, rental of temporary storage is a better way to think about these carbon contracts. They shouldn't be valued the same as permanent storage, but we need to develop mechanisms that don't necessarily tie things up for a long period of time or would do so only through repeated contracts.

Darrell Corkal: I'm with the Ministry of Agriculture, in the Agri-Environment Services branch, but my fundamental organization is the Prairie Farm Rehabilitation Administration. We have a physical sciences and social sciences project, and I want to emphasize what Harold Coward was saying: we need to look at the ethical and social consequences of climate change. What's been fascinating about the study is how the physical and social sciences have been linked together. We know when John Palliser came here in 1857–1859 for a survey of the prairie region, he said that it wasn't fit for habitation; he concluded that, we now know from tree-ring data, because he came at the end of a prolonged period of drought, probably 10 to 15 years. Government policies, provincially and federally, established prairie settlements in the early 1900s. Interestingly enough, some 500 years of tree-ring data suggest that such multi-year droughts in the prairies are recurring. Of course, you have wetter-than-average years and drier-than-average years, but the multi-year droughts are the problem. How did we as a society adapt to that? Well we created organizations like the Hanna Special Areas Board and the Prairie Farm Rehabilitation Administration at the time when Canada was suffering its greatest economic and ecological impact. The "dirty 30s" had a serious impact on the country. We were going through a world economic crash then as well, and the government of Canada was spending half of its budget on relief. We established a successful agriculture in the prairies by taking advantage of moisture retention in the clay soils. So, technical solutions were related to that. Institutional adaptation created organizations to help people understand and link the agronomy in water management to soil. Having said that, we are not completely free from vulnerability to drought. In their report on the effects of the 2001–2002 drought in Canada, Elaine Wheaton and Suren Kulshreshtha stated that a larger area of the country was affected than by the drought in 1931. The impact to the country's economy was a \$6 billion drop in GDP, with a loss of 41,000 jobs. However, the ecological impact on resources wasn't major because it lasted only 2 years. Our management strategies allowed us to cope with a 2-year drought. If we were to get a 5- to 8-year drought or an 8- to 10-year drought, as the tree-ring data suggest we might, the questions we are facing are: "Will we be able to cope and how will we adapt?"

And this is where we come back to Harold's comments. We must consider not only the technical aspects and the economic aspects, but also the social impacts. There's a trend globally towards integrated water-resource management. Even the term "stewardship" is being used in organizations' names such as the Manitoba Water Stewardship Organization. The notion of managing water and our resources by incorporating the stakeholders' and citizens' statements is increasingly gaining favor. How will governments, federally and provincially, manage that and actually allow stakeholders to have a say? There's an increasing consensus about the need to move to a technocratic paradigm with a hazard-centered interest in geophysical processes into one that emphasizes the mutuality of hazard and social conditions. Harold talked about what the consequences of our actions are. We also must consider the consequences of not acting.

Malcolm Devine (Performance Plants): Dr. Coward, I enjoyed your presentation. My question concerns comments you made about your discussions with religious leaders from

different faiths, Judaism, Islam and Hinduism, and their views on transgenic plants and animals. I'm not sure whom you are speaking to in the Christian world. I assume it's not the Pope. The Vatican has a quasi-academy of sciences that recently met to discuss this whole topic. They gave their considered opinions, which you reflected to us; how do their opinions relate to those of the Catholic in the street, the Hindu in the field, the common man if you like? Is there a relationship? Because, whatever the lead Judaic scholars say that as long as the "cowism" of the cow is still there it's okay, if I run into a Jewish colleague and ask him, he might say, "No way." Can you comment on that?

Harold Coward: When we do the research in each tradition, we don't go to religious leaders like the Pope, in any of the traditions. We go to ethics theologians or scholars in the tradition, who have actually done work on the question, read the science, thought about it. In Islam they get the lawmakers together with Muslim scientists and try to come up with a position. And you are quite right: the leaders come up with positions that very often are miles apart from what the lay people say. I mentioned that we had focus groups as well, of lay people from each of these traditions. And we had separate focus groups of lay people who were scientists, lay people who were in animal-rights groups, lay people who were regulators, government regulators, and so on. We tried to get a cross-section of lay people, so it wasn't just the ordinary chance person in the street, but included those actually engaged with the issues. Take the Jewish example that you mentioned. The Halakhah Jewish law scholars in the universities were the ones who said, "No problem." Put a pig gene in tomato or chicken, as long as it doesn't change the appearance of the tomato or the chicken—and you can feed pig material even to a chicken and the digestive track of the chicken will purify it. As long as the chicken doesn't change too much, that is in agreement with the Talmudic position and there's no difficulty. Laurie Zoloff, an orthodox Jewish scholar at Case Western, has her research focused on the use of transgenic rice and how it could address hunger in Asian countries. When we met with lay people, their response was—and it's true for almost all traditions—abhorrence over any notion of transgenic animals, not so much over plants. It's always the case that animals are closer to us as humans so that is where we tend to identify. So you get this separation, but that has been true in the history of the religious traditions all down the centuries. Leading scholars take positions and lay people take a while to catch up and go with them. And that's true of our society in general, I would say, even for secular groups.

With reference to transgenic creations, whether animal or plant, secular vegetarians for example say that they are unnatural, whereas religious people say that you are playing God and shouldn't be meddling and creating unnatural things. And you see the power of that language in marketing, in supermarkets everywhere. "Natural" and "organic" are great sellers because they connect somewhere in the gut. It will take a while for our use of language to catch up with modern science and it will take a while within the religious traditions for the positions of the theologians to be understood and adopted by the lay people. I prefer to make my critical assessments on the basis of the scholars who have really thought through these issues, and the same with secular ethics positions.

Tom Wilson (Pennsylvania State University): Regarding an offset cap, do you think we need one? Should we just allow unlimited offsets to enter the market? Future discount rate? So how do we account for future generations who plays a large role in emission-reduction targets? Verification, validation and certification, what's that process like? Should we streamline it to allow more entries? Should we erect barriers to entry? And interaction between the new and old markets—where does the CCX¹ come in?

Benjamin Gramig: Lots of material there. I'll quickly address a couple of points and we can talk more after if you want to go into more detail. In terms of an offset cap, this is good. It's a common element of policy proposals, an upper limit on how much of those emissions that need to be met in some binding way by the firm subject to the cap—an upper limit on how many offsets they can use. For instance, under the current legislation being debated in the United States, there is an upper limit of 2 billion metric tons from offsets, roughly 1 billion domestic and 1 billion from international sources. So there tends to be a limit—.

Wilson: Per annum?

Gramig: Per annum, that's right. Under legislation that was being debated last year, 15% of your emissions reduction obligation could be met using offsets. This is actually going to trickle down in the same way and it's going to translate into a percentage of your emissions cap for an individual power facility that can be met using those. There's a very complicated and hard-to-understand formula that actually spells out how this would happen in those 1,200 pages that were mentioned. A lot of these details are left for the implementing agencies. I don't know how this works in Canada with your government, but, when we pass legislation, oftentimes a lot of those details are left for the agencies to implement. The Environmental Protection Agency in this case, although that has changed as well in amendments to the original legislation. Agriculture has been successful in moving control of the whole offset program over to the Department of Agriculture and away from EPA. At least, as of Tuesday, that was the case. I don't know if things have changed since Tuesday. They are changing at a rapid pace.

I will address just one of the other things that you mentioned and that was discounting. How do you deal with some of these issues? The permanence issue is relevant here, in terms of how to think about how to assign these credits or allow firms to sell the offset credits they may generate from their practices. What the Chicago Climate Exchange has done, and also what is being done in Alberta, is you have to apply some sort of a discount factor to an individual practice. For instance, for every 5 metric tons I remove from the air through sequestration, I'm eligible to sell only 4. Something like that. And then access credits are commonly placed in something called a reserve pool, to cover

¹Chicago Climate Exchange

reversals. If people will revert on their practices to try and build up a reserve, it's a safety margin for trying to keep in touch with the cap. If you had mass reversals, this clearly would not work. It's an imperfect solution, but it is one way they have tried to address that particular issue.

Wilson: You said the reserve pool is actually to account for a discount rate? Or those that default?

Gramig: You can think about it as default. They revert. Maybe I sign an 8-year contract and I provide sequestration for those 8 years; what happens if, at the end of 8 years, I plow up my field because I want to get another 8-year contract the following year? These kinds of details haven't been worked out, but the idea is they would then put in extra additional credits over the course of those 8 years that are there and are accounted for. Everybody feeding credits into the system is doing that so you build up a pool to try and control the total amount, or account for some amount of reversal that occurs over the whole portfolio of farmers.

Wilson: Then I guess the only other burning question is, are the new markets interacting with the old?

Gramig: They are trying to take these things into account when they design the policy. So, for instance, if you look at specifically the issue of additionality and what practices are going to be credited, all the tillage, reduced tillage, no-tillage, out there that might be eligible under the US legislation has a retroactive date. It goes back to January 1, 2002. That happens to coincide with the same rule that is in place for the CCX. It happens to coincide with the same rule that's in place for the Alberta offset system as well. So some harmonization is going on in trying to make some of these things link up, and through things like the Western Climate Initiative. There's clearly a close link in trying to develop at least the Canadian and US policies. Maybe at the provincial level right now and at a state level, but sometimes these things lead to larger initiatives and, hopefully, will provide some framework in the future. There is reference to Kyoto as well in trying to keep intact the clean development mechanism and those other linkages in the legislation, so that it leads to international efforts as well.

Audience Member: When you were discussing why economists like cap and trade, you compared, or you contrasted, CO₂ and SO₂, and suggested they were different because SO₂ delivers its problems from a point source. But something disturbs me about that because, for example, if you take the sea-level rise and the storm surge in particular coming from sea-level rise, it has much potential to impact coastal areas. Some 80% of the United States is coastal. Two thirds of the world live within 100 miles of the coastal range. So the economic cost of storm-surge-related problems is certainly comparable or more to what happened to the Appalachians.

Gramig: One of the biggest criticisms of the SO₂ program was the disproportionate division of costs and benefits. Perhaps most of the problems originate in the US Midwest where there are many old, coal-based power-generation plants, and the problems are being deposited on the northeast and the eastern part of Canada. In terms of imposing restrictions on those power plants, a lot of associated costs would be concentrated there, whereas all the benefits would be experienced by the receptors. This is clearly going to be the case where sea-level rise affects concentrated populations in various locations across the world. Concentrated costs or damages will be experienced. The emissions that occur everywhere have effects at some marginal level, right? The idea was that all these different locations contribute in an equivalent way to the overall impact on the climate.

Steve Pueppke (Michigan State University): Harold, you mentioned that religious leaders' willingness to accept GM animals and plants depended on the motivation—why they were made. On one level I understand that, but it seems to me that figuring out what the motivation is could be difficult. Would you comment on how you figure out why those things happen.

Coward: You're right. In my analysis, the most common thing that all of the religions came back to is motivation. And they all agree that the motivation has to be positive. For the good, not only of humans, but animals, plants, earth, air, water. Each tradition has its different way of trying to assess that. Buddhism uses deep meditation to come to an individual realization of what their bottom-line motivation is, doing it under a teacher. In Judaism, it's much more the law. In Christianity, it's a question of how you understand the stewardship ethic as it's laid out for you, and then are you behaving in such a way to be a steward following that ethic or are you doing it for your corporate bottom line or for your own selfish profit, and so on? So, every tradition cultures its own believers in an understanding of what selfishness would be in that tradition. Now, I think we can, even in a secular way, come to some understanding of what selfishness would be. If I followed the model that I laid out to begin with, I said if you are doing it only for yourself and your family it might be ethical, but you can't distinguish between ethical and selfish there. But if you extend it to your neighbors and everybody else in your own region and country, that could count as ethical. If you extend not being selfish to people in other countries and so on to future generations to, at the ultimate level, earth, animal, plants and water. And that can be monitored in policy decision level. What does your policy say as to how you are going to decide in your behavior? I think there are ways to put teeth into the criteria there.