

Lake Winnipeg Basin Summit Follow-up Meeting

December 1, 2011

Our Lake, Our Solutions



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Executive Summary

STAKEHOLDERS HELP ADVANCE LAKE WINNIPEG BIOECONOMY CONCEPT

At the Lake Winnipeg Basin Summit in December 2010, stakeholders across Manitoba's Lake Winnipeg basin were convened to discuss and clarify an opportunities agenda for Lake Winnipeg's nutrient loading issue. At that summit, the International Institute for Sustainable Development's (IISD's) Water Innovation Centre introduced two key ideas: firstly, that nutrient and water management problems faced by Manitoba are actually opportunities for tremendous innovation and economic development, based on the fundamental realization that the pollutant damaging Lake Winnipeg—phosphorus—is actually a scarce and strategic resource; and secondly, that Manitoba, as the downstream jurisdiction and sole steward of Lake Winnipeg, has everything to gain by demonstrating a world-class, innovative and ultimately profitable approach to its management. The Summit reinforced the need for a strategic approach to Lake Winnipeg Basin management, based on sustainable development principles. The Summit's steering committee recommended that IISD focus on advancing the bioeconomy aspects of the opportunities agenda and demonstrate some early action. Strategic and technical advisory committees were struck at this point to help guide these efforts.

On December 1, 2011, IISD's Water Innovation Centre convened the strategic and technical advisory committees, along with many of the active partners on bioeconomy-related initiatives, to review progress on the one-year anniversary of the Lake Winnipeg Basin Summit. The Manitoba Museum also made a major announcement on the H2O Solutions Project, a planned public exhibit on the science of Lake Winnipeg eutrophication and potential solutions.

At this first anniversary meeting, IISD introduced the Lake Winnipeg Bioeconomy Project as a key initiative for transforming the problem of Lake Winnipeg and water management in Manitoba into a major sustainable development and clean technology opportunity.

The Lake Winnipeg Bioeconomy Project has environmental, economic and social goals and thus represents all dimensions of sustainable development. The environmental goal is a 50 per cent reduction in the phosphorus load on Lake Winnipeg (Save Lake Winnipeg Act, 2011) AND improved watershed health throughout the Lake Winnipeg Basin. The economic goal is to create a major clean technology cluster in Manitoba focussed on developing the technology and management systems to solve our water and nutrient management challenges, with a follow-on goal of developing export markets for this technology. The social goal is to help revitalize rural communities throughout Manitoba through new economic development opportunities enabled by clean technology investments.

IISD's Water Innovation Centre is advancing the Lake Winnipeg Bioeconomy Project through four major activity streams: (i) Strategy and Vision; (ii) Innovation and Investment; (iii) Communication and Partnerships; and (iv) Policy Development. A key strategic component introduced at the December 1, 2011 event was the Manitoba Bioeconomy Atlas, a geospatial planning and design tool for identifying novel watershed management investment opportunities that link nutrient management with flood and drought mitigation. Short- and medium-term water storage on agricultural land was presented as an important area for pilot projects that demonstrate synergies between nutrient management and flood mitigation.

Participants at the workshop responded to a series of questions to elicit comments, concerns and clarifications of the Lake Winnipeg Bioeconomy Project and the Manitoba Bioeconomy Atlas as a foundational planning tool.

Participants generally agreed that the fundamental principle underlying the bioeconomy approach—turning environmental problems into innovative business opportunities—has much merit in the rural agricultural context. Frequently heard sentiments included “If it doesn't pay, it's not going to survive,” and “make solutions attractive to stakeholders.” Participants also recognized that a prudent business case and plan were essential and should consider both public and private benefits. In cases where the public benefits outweigh the private benefits to the land owners and managers, some forms of watershed management deserve policy and programming support. Another widely shared opinion among participants was the importance of a sophisticated, clear and consistent communications strategy that articulated the benefits of the bioeconomy approach at the cabinet level all the way to community level. In a similar vein, participants also asked for tools and education that would mobilize “bottom-up” planning and decision making.

Some participants expressed apprehension that watershed management projects designed from the bioeconomy perspective could compromise biodiversity and could create net negative environmental impacts, a concern that further reinforces the need for pilots and active adaptive management protocols to ensure net benefits are positive and that economic development does not happen at the cost of social or environmental well-being.

IISD committed to continue working with and reporting to the strategic and technical advisory groups and to continue engaging local, regional and national partners and stakeholders in advancing the opportunities approach represented in the Lake Winnipeg Bioeconomy Project.

Background

The Lake Winnipeg Basin Summit Anniversary meeting was convened on December 1, 2011, exactly one year after the Lake Winnipeg Basin Summit in 2010. The intent of this meeting was to inspire, energize the process initiated one year ago and facilitate change by highlighting progress made on initiatives that not only have nutrient management benefits within the Lake Winnipeg watershed, but also provide economic opportunity to local and regional communities.

The anniversary meeting included the strategic and technical advisory committees that were struck following the 2010 summit and stakeholders with an active and articulated interest in the Bioeconomy concept and those working closely with IISD to further this idea. There were representatives from federal and provincial governments, NGOs, academia, industry and other relevant agencies.

This document provides a high-level synthesis of the event and the feedback from the stakeholders present at this half-day meeting.

Welcome and Introductions

IISD President and CEO Franz Tattenbach welcomed everyone to the event and commented on the level of interest and energy of the stakeholder groups. He hoped that IISD could continue to lead and facilitate a Lake Winnipeg Basin strategy through the concepts and analyses for the Manitoba Bioeconomy and related concepts that IISD has been actively working on.

Presentation: Introducing the Lake Winnipeg Bioeconomy Project (Dr. Henry David Venema)

Dr. Henry David (Hank) Venema introduced the agenda, and gave an introductory presentation that recapped the Lake Winnipeg Basin Summit held in November–December 2010. He then presented some highlights of regional events and initiatives related to Lake Winnipeg Management in the past year. He also presented a summary of the Great Bear Rainforest initiative in British Columbia and their collaborative efforts for ecosystem management as an inspirational and appropriate analog for our work in the Lake Winnipeg basin.

He gave some information about IISD's own work following the summit, and summarized it as the Lake Winnipeg Bioeconomy Project, with a long-term vision and action plan. The Lake Winnipeg Bioeconomy Project builds on the two main insights presented at the Summit: firstly, that nutrient

and water management problems faced by Manitoba are actually opportunities for tremendous innovation and economic development, based on the fundamental realization that the pollutant damaging Lake Winnipeg—phosphorus—is actually a scarce and strategic resource; and secondly, that Manitoba, as the downstream jurisdiction and sole steward of Lake Winnipeg, has everything to gain by demonstrating a world-class, innovative and ultimately profitable approach to its management. This action plan comprises four pillar of work: strategy, innovation and investment, communication and partnerships and policy development. This initial multi-year portfolio of work is anticipated to take the next 3-4 years to complete.

Presentation: The Bioeconomy Atlas (Kyle Swystun and Richard Grosshans, IISD)

Following Dr. Venema’s presentation, IISD staff members Kyle Swystun and Richard Grosshans made a presentation on a Bioeconomy Atlas for Manitoba. The presentation introduced the Manitoba Bioeconomy Atlas as a decision-support tool and a key operational basis for the larger Lake Winnipeg Bioeconomy Project. The utilization of the Manitoba Bioeconomy Atlas will allow users to envision the watershed of the future (a vision discussed at the 2010 summit) and facilitate the development of the Lake Winnipeg Basin Bioeconomy Management/Investment Plan. The presentation articulated the three main functions of the Manitoba Bioeconomy Atlas as: (1) A Resource Assessment Tool; (2) A Watershed Management/Design Tool; and (3) A Rural Economic Development Tool.

Presentation: Updates Since the Lake Winnipeg Basin Summit (Dr. Henry David Venema, IISD)

Dr. Venema highlighted the need for policy development and programming for a clean technology incubator in Manitoba that would help develop some key technologies needed in order to achieve regional priorities of climate mitigation and adaptation, lake protection, flood protection, drought resilience, and help develop new agricultural value chains. These technologies include bio-refining, biomaterials, systems design and logistics, geospatial analytics, smart hydrology and hydraulics, ecosystem modelling and visualization, and low-impact agricultural harvesting.

Following the presentations, participants commented on the **complexity of issues** that need to be addressed, including issues of uncertainty. There were a number of comments articulating the need for **sound economic analysis** to support the bioeconomy, along the lines of “If it doesn’t pay, it’s not going to survive.” Related comments were made around the need to **communicate clear economic value** to the most relevant stakeholders, with questions such as “What is the buy-in for the agricultural community?” Another critical issue that received some comments was the **need to prove the nutrient reduction potential** from implementing the bioeconomy as envisioned. Comments included “How much of the nutrient reduction target (50 per cent) would be achieved by

this vision?” and “If IISD could provide some key information to support the statement that the bioeconomy strategy can solve 50–75 per cent of the nutrients entering Lake Winnipeg from Manitoba, this will greatly help implement this strategy.”

A final set of comments focussed on the need for **clear and powerful communications** to broader stakeholder groups. Comments addressed “the need for education on the benefits of the bioeconomy strategy,” “the need to clarify and target communications,” and the need to communicate the bioeconomy strategy to a variety of stakeholders—from “the Premier’s office to the Joe and Jane on Main Street.” A specific comment about the Bioeconomy Atlas talked about the need to include transportation infrastructure in the calculations as biofuels are expensive and heavy to transport. A comment recommended using a 100-mile instead of a 60-mile radius.

There were a few individual comments about clarifying whether the fuel could be used for heating homes and the need to consider the “50 per cent reduction in food production as a result of the bioeconomy implementation.”

Facilitated Group Discussions

Facilitated group discussions allowed attendees to comment on or pose questions about all the presentations made. The group discussions focussed on the following questions:

1. What are your concerns going forward?
2. What should the priorities and emphases be going forward?
3. What complementary work is underway and what are the opportunities for collaboration across the basin to advance a bioeconomy in Manitoba?

The following pages are compiled from the plenary discussion as well as from the reporting worksheets (table and individual).

Question #1: What are your concerns going forward?

Compiled responses: There were some responses that provided support for the vision and actions as presented. These were captured in comments such as, “Support of turning a problem into an opportunity—we need to do and think and act (just do it)” and “We need to get this turned around—Lake Winnipeg is a phosphorus sink.”

Many of the key concerns articulated were around the need for **more clarity on the financial feasibility** of the bioeconomy strategy. Comments included “Focus on business opportunities to make sure that the development plan is financially sustainable,” “If the economic benefits are not articulated, then there will not be buy-in” and “Make solutions attractive to stakeholders,” and the need for appropriate sources, diversity and timeliness of funding for the Bioeconomy initiative. In

addition, there were comments on the need to incorporate payments for ecological goods and services (EGS) mechanisms, and better linking of environment and economics. A related comment was about the need to recognize externalities and the choices that need to be made to implement the Bioeconomy Strategy.

Another series of comments were directed towards the need for **clear, coherent and adaptive policy and management mechanisms** to support and direct the bioeconomy strategy in the best possible manner. Comments addressed the following issues: “information from the top down to give tools and education for bottom up decisions;” “lack of policy consistency from Manitoba government to anticipate, see the big picture, fuel efficiencies, water, waste management and lay the groundwork;” “coordination and collaboration among government levels and stakeholders towards bioeconomy;” “coherence—hard to get interaction within government, among partners. Government departments are focussed around budgets;” the “need for clarity regarding government programming/commitment/consistency;” and the need for a “champion” or leadership for this issue and “lack of unified voice.” A policy barrier also identified was “130 years of politically driven drainage programs.”

Other comments included the **need for pilots** for measuring impact and to build effective collaborations. Comments included, “pilot projects to prove success including partnerships with community—to show that storing 5 per cent of water will equal more than a 5 per cent yield increase,” and “pilots with those who suffered from flooding this year.”

A series of comments addressed **concerns around the potential ecological impacts** of implementing the bioeconomy strategy such as, “managed systems between natural and man-made,” “biodiversity implications of harvesting” and “do not harm soil quality.” Ecological concerns were also voiced on the need to focus on the watershed, as opposed to municipal- or lake-level issues and comments such as “harness natural systems and low costs options.”

A need for **clear and multi-level communications** was named in a number of comments. Some of these included, “the need to personalize some narratives that connect with individuals,” “how to explain to people that taxes will increase and major change will happen,” “lack of a sense of urgency” and “publicize sense of urgency.” There was also a call for ensuring that the business community is well aware and educated on these opportunities, evidenced through comments such as “degree of readiness by Clean Technology sector” and “lack of corporate awareness/engagement in social/environmental responsibility.”

Other comments addressed the need to include transportation infrastructure while developing the bioeconomy atlas and to include the financial of biofuels storage and transportation in estimates. Another comment addressed the need to clearly articulate the benefits of biofuels as an energy source as compared to Manitoba Hydro.

Individual inputs: There was also a range of inputs in the workbooks left for individual comments. While many comments supported the issues identified above, a few addressed other, unique, issues. A number of individual comments addressed the need to focus on natural systems as opposed to engineered solutions. Another common theme addressed by individual comments was the need to clarify the prerequisites, benefits and economic costs and opportunities of the strategy and suggestions for a clear business model. Other comments included, “Get all the provinces in the watershed involved;” “need for coordinated efforts;” “How do you convince a few people to give up land to benefit many? How do we find these projects?” “We need to act fast while the flood issue is still fresh—strike while the iron is hot;” “Be very clear on what we need to make this work;” “Drainage/policy conflicts need to be reviewed;” “cost and energy required to run projects;” and “Effective government support is needed for planning and programming.”

One comment made the point that we already have a robust bioeconomy in Manitoba agriculture and the focus should perhaps be on gaining knowledge and tools for doing a better job of managing water nutrients in the existing bioeconomy rather than looking for “new opportunities.” They claimed that new opportunities would not offset problems caused by current land use practices.

Question #2: What should the priorities and emphases be moving forward?

Compiled responses: A clear set of comments addressed the related needs for **leadership, coordination and collaboration**. These elements came through in comments such as “partnerships with all jurisdictions in the watershed;” “coordinated efforts—build leadership;” “bringing stakeholders together in a manageable way;” “need connectivity moving forward to mobilize support and drive policy change;” “get government signed on—binding policies;” and “senior political support for a clearly communicated visioning action plan.”

Another set of comments focussed on the need for clearer and broader **communications**. Specific comments included, “Be sure there is communication to reduce duplication;” “Personalize the message;” “educating/communicating—getting buy-in for the costs/changes involved;” “link the residents with the plan;” “more communication;” and “appropriate language (same message) for each group.”

A series of comments addressed the need for **sound scientific backing and assessment** to ensure due diligence and to accurately assess real and potential impacts of the proposed actions. Specific comments included, “collaboration with local projects and science,” “Check if no further environmental impact from the bioeconomy model” and “scientific quality control that we are getting the benefits that we hoped for.” A related set of comments address the need for **pilot initiatives** as part of an **adaptive management** process of learning by doing. This concept is supported by comments such as, “proof of concept,” “successful demonstration,” “courage to experiment on a commercial scale” and “micro-programs to show how we can live here and benefit.”

Another set of comments addressed the need for **prioritization**. This included both geographic and issue prioritization as seen by comments such as “Start in the city of Winnipeg,” “Target important issues” and “governance priority.” Some comments went a step further and identified flood management as a regional priority with comments such as “Manage the flooding through watershed management” and “flood mitigation.”

A set of broader comments addressed the need for a **well-articulated business plan** including clear vision, actions and benefits. This was supported by comments such as “well thought out business plan,” “feasible and commercially viable,” “Define full range of benefits,” “We fund power plants with long-term interest and we need to do the same with water management programs,” “We need to know that there are markets” and “finance and sustainable economic plan/model that makes sense.” A related set of comments addressed the need for **adequate resources** and engagement with the business community with comments such as “Businesses need to be reassured that there is an opportunity” and “Need to work with existing investment resources.”

Individual inputs: Individual comments were once again largely consistent with the table discussion notes but also provided additional insights with the following comments: “Value of nutrients—we are not dealing with heavy metals but materials that have value;” “Identify opportunities for incentives: tax, R&D;” “need for toolkit to translate policy to action, e.g. Atlas or AAFC DSS;” “clarify returns to the community;” “Engage in robust economic modelling to identify fiscal mechanisms required—business opportunities and labour/training opportunities;” “need for high resolution elevation data—LIDAR for future modelling work;” “Focus on point sources (i.e., treatment facilities);” and “Incorporate climate data into models.”

One comment also suggested an inventory of work that is underway at various stages to present a clear picture of where progress is being made towards the vision of a functioning bioeconomy. Another comment called for an umbrella group to coordinate the work of all non-governmental organizations involved in water issues in the watershed.

Question #3: What complementary work is underway and what are the opportunities for collaboration across the basin to advance a bioeconomy in Manitoba?

Compiled responses: A list of complementary work and opportunities identified at the discussion are listed below and broadly categorized for their most relevant role:

Cleantech engagement:

- Centrallia—to attract regional and foreign business and industry expertise to Manitoba
- Policy drivers:
- Coal tax—driver for alternative fuel sources
- Linkages with flood mitigation efforts—opportunity for collaboration
- Municipal level—if there is a way to reduce costs on drainage it is easier to get buy-in
- At the last Premier’s Summit, Manitoba leadership expressed interest in Green Economy

Related organizations and individuals:

- Ducks Unlimited research and policy
- NRTEE—looking at more Western Canadian environmental management
- Vicki Burns through the Gordon Foundation—looking at coordination
- Lake Winnipeg Foundation—Science Advisory Board

Interesting linked projects/initiatives:

- Edie Creek Watershed Project
- BOB program demo projects
- Pinawa—model bioeconomy community needs. Small community can be taken into account
- Wetlands and nutrient management and EGS policy research (DUC)
- TCMW—test bed for watershed
- Watershed Systems Research Program—focus on Lake Winnipeg
- AAFC/EC/MWS/CD—project to model impacts of affirmative scenarios on nutrient loading and economics (sustainability)—the Red Assiniboine Project
- Broughton’s Creek Model Watershed
- ALUS project in Blanshard

General Comments

General comments from individuals included expressions of interest in being involved in the project, as well as other forms of support for the initiative. Some comments provided useful feedback such as “We need to choose (or decide) what entity will operationalize the bioeconomy (for e.g., Manitoba Hydro, a new crown corporation, or the private sector). Another comment suggested making repeated presentations to the premier, cabinet ministers and mayor to push for political commitment. Another comment recommended starting small to avoid massive roadblocks and a resulting lack of progress.

Presentation: The H2o Project (Scott Young, Manitoba Museum)

Scott Young of the Manitoba Museum gave a brief overview of the H2O project, a proposed permanent exhibit of the Manitoba Museum being developed in collaboration with IISD and currently in its fundraising stages. The project is anticipated to communicate and influence a broad range of public and decision-makers and convey the vision of a possible Lake Winnipeg watershed with healthy ecological, social and economic benefits for current and future generations.

Wrap-up: Dr. Henry David Venema

A wrap-up by Hank Venema indicated the continued interest of the IISD Water Innovation Centre in keeping this process going and realizing bioeconomy opportunities that improve the health of Lake Winnipeg. Dr. Venema concluded by voicing hope for continued participation and collaboration with regional partners and stakeholders