# Proceedings

## Canadian Sustainability Indicators Network

## Atlantic Meeting

## *Mixing strategic thinking and knowledge sharing*

## Tuesday November 25th, 2003

## Casino Nova Scotia Hotel in Halifax

# EXECUTIVE SUMMARY

This summary lists some of the common and not so common points brought forward during CSIN's day of knowledge sharing and strategic thinking. We encourage people to read the discussion sections in the proceedings to get a true flavour of the conversations occurring during the day. Participants outlined many benefits to be gained by CSIN members and put forth a list of priorities for CSIN to focus on first.

## Discussion Corner Summary Points

### *Collaboration and coordination between scales*

- Communication is key to understanding, cooperation and mutual trust among partners.
- Recognizing the different scales, defining their overall roles and illustrating how they link to each other is critical.
- It is important to demonstrate the relevance of large scale information to those interested in small scale information and vice versa. Everybody benefits from both levels of information.
- Coordination that is central, but not controlling, more catalytic, is important.
- Interpretation and metrics can be different among the scales, but the message needs to be consistent.
- Takes time - selection of indicators and meeting all stakeholder requirements is a large challenge.
- Don't point fingers – identify key problems
- Indicators have to be jointly reported.

### *Incorporating indicators into decision making*

- Must have credibility with decision makers.
- Big challenge is getting people to understand data and significance.
- Numbers are not enough. Must make significance of data saleable.
- Communication skills make a difference.
- Might need different indicators for different audiences.
- Relate indicators to targets.
- Engage those who have the most to win or lose in the decision process.
- Need to get the right indicators to the right people in the right format.

### *Linking environment, social and economic indicators*

- Health is an overarching issue.
- To reach boardrooms use dollars. To reach people use social language.
- Valuing indicators in $ can be effective and controversial. Use monetary value as a strategic tool.
- Environmental numbers can change the social agenda
- Need tools to reach the whole community – don't need to necessarily improve science but need to focus efforts and communicate.

- People want to know what they can do to make a difference

***Stories about how accessibility reduces barriers and enables better decision making***

- Several stories related how mapping made a difference.
- The organization with the best information got their information used.
- There are good stories about sustainable management at the watershed level and specifically about the idea of an organic watershed.
- What is needed most is the social links
- An indicator must pass the "so what?" test. If indicators don't mean anything, they won't be used.
- There needs to be a place to input community level information so it can be considered in the bigger picture/national level.
- Registry of projects – but also registry of results.
- Story of first traditional knowledge database. By capturing traditional knowledge in a database, it allowed for input into land use, education and community decision issues.
- There is a wealth of Canadian information being displayed at the international level, but when organizations try to access this information for use in Canada it is often dispersed, costly or just not publicly available.

## Summary of benefits CSIN members hope to gain

1. Access to data, information and resources
2. Awareness of what is going on
3. Learning, including assistance with new indicator development
4. Sharing, including an informal review process
5. Working through technical and practical issues
6. Linking to policy – how that works
7. Who is who
8. Skills and development – professional and personal
9. Sharing success stories and how barriers are overcome
10. Collaboration tools (web site – clearinghouse, platforms)

## Summary of Priorities for CSIN to focus on

After discussion, a list of 5 priority activities for CSIN was developed.

1. Develop tools or processes to share data, indicator and store indicator knowledge – research, guidelines, who's who, establish informal and formal review process
2. Develop a process for CSIN to communicate – face to face, virtually-real time
3. Develop and implement an interdisciplinary indicators project that includes science and policy considerations (linkages)
4. Engage and involve a broader community including visible champions and decision makers
5. Identify ways to incorporate indicators into decision-making

## Initial brainstorming on CSIN priorities

***CSIN Project***

- The project has to be generic, perhaps concentrating on linkages.
- The project can act as a catalyst for interaction within CSIN, something to focus people's attention.
- Could develop a matrix of indicators
- Look at ways indicators have been used to make trade offs
- Compile examples of how indicators could have been used in decision making to achieve different results – we are making the same decisions over and over.
- Could take some biophysical parameter that has been well researched and develop a set of criteria.
- Could use some of the existing projects as sample projects for input from different perspectives.

## Tools

- Easy, simple communications tools are needed.
- The volume of e-mail is a challenge for those using list serves. Option would be to have a site where people could go and look for postings, but others like to have notice of postings.
- Regular e-flyers are useful, but need resources to organize.
- Question was asked as to who should host the CSIN site and how can CSIN sustain itself through budget cuts and the loss of key people?
- Whatever is developed, there should be no duplication. There should be "the site".

## National meeting

- The goal is to have a dynamic meeting in 2005.
- Objective is to learn what is going on outside your own sphere.
- There should be considerable effort to build momentum for the meeting.
- Should include the participation of some stars.
- Meeting could be presentation based, several concurrent sessions.
- Could build the subject areas through CSIN - virtual working group.
- Could build momentum by continuing to tag one-day, regional meetings onto other events.

*There seems to be a great willingness to work together, but in order to transform this willingness into action, we will need to find a focus.*

# Table of Contents



Acknowledgements

The organizers would like to thank the recorders, for without them this record of shared knowledge and thinking would not exist. Nancy Doucet and Meghan O'Blenes. As well as, participants and last minute, graciously accepting recorders Marlene Doyle and Elizabeth Kilvert.

# Opening Remarks

Dennis O'Farrell
National Indicators and Reporting Office, Environmental Reporting Branch, Environment Canada

I have been involved in environmental indicators and state of the environment reporting for more than 10 years and have been involved in starting CSIN. You are all in the right room I hope? I will be one of the talking heads but there won't be that many. The success of this day is primarily up to you. It is really an interactive session.

It really is an honour to have so many people interested in environmental and sustainability indicators come together and hopefully we will have an exciting and informative session, learn from each other and build on this, build a strong and supportive network for all of our work. We will all need to think about our roles within this community, what we can put into it and what we can get out of it.

So far, I don't think indicators have quite made it to being key decision making tools. They are getting there, but practitioners are still struggling to get environmental indicators to be part of everyday decision making. I think all of the themes we will be discussing today relate to the overall objective of getting good, objective information on the environment, on sustainability, into the decisions that are made by policy makers and individuals.

For example, having logical links between scales will allow us to prepare more coherent stories that can be discussed by policy makers at all levels together with a more common understanding. This kind of linking will help in engaging policy makers at all the different level and help policy makers find the synergy that we need to achieve sustainable development. Having access to good, robust and objective data underlies all of our work and without that we can't have the quality information needed to integrated into decision making.

One issue that we are not specifically discussing today, but is important to keep in mind, is that no matter how concise and representative our indicators are, there will always be a need for context and interpretation. We need to pay attention to this. How well we retain objectivity and concise messaging while improving the policy relevance, will be important. I think it has something to do with insuring there is good transparency to the data and science supporting the indicators and linking to the needs of decision makers of different realms.

One of the more interesting realms that I have encountered recently is the financial sector and the role of financial advisors. Where there is a fast emerging recognition that investment with full open and accurate knowledge is critical and that long term sustainability is part of what defines corporate financial health.

One of this morning's headlines mentioned Enron again. There is a growing requirement for reporting and disclosure in the financial world. That includes an understanding of the company's environmental record. I think we need to talk directly to financial advisors and other audiences to understand the best way of translating scientific understanding and sustainable thinking so that the information relates to the priorities of the audience, whether it is corporate financial health or a healthy world for our children. Perhaps there should be a working group amongst us in this community to look at how to talk to different audiences and how to understand what types of information they need and what types of information would be most readily absorbed by these different groups.

## Overview of indicator initiatives and the views of practitioners and managers

Barb Buckland
National Indicators and Reporting Office, Environmental Reporting Branch, Environment Canada

I will be sharing a little of the information my office has acquired during the process of developing an Environment Canada Strategy for Environmental Indicators and State of the Environment Reporting. A lot of research was completed to develop the strategy and move it forward as a work in progress. In order to develop a well rounded strategy, the following steps we completed:

- Conducted interviews of indicator practitioners and senior managers
- Developed two background papers regarding the current state of indicators
- Improved the International Institute for Sustainable Development's online compendium of indictors and reporting activities
- Widely circulated a draft version of the strategy for review, including CSIN
- Consulted EC managers and staff

The messages from the interviews were:

- Need to change what we are doing
- Move for more coherence in what is going on in the indicator and reporting world
- Better link to policy
- Environment Canada's focus needs to be environmental
- Shift from the classic indicators that are data driven to user-defined indicators
- Indicators need to inform monitoring
- Link to performance measurement
- Take a phased approach: be modest at first

Views did differ depended on the perspective. From the regional perspective, the message was that headquarters' role is really to enable indicator development

by: bringing people together; developing the tools needed to share information; and ensuring everyone has as sense of best practices and lessons learned.

From the national perspective, the message was that EC should play a greater role in developing a core set of indicators.

The background papers were developed in two parts. Part I is an in depth analysis of what the current status and trends in indicators development are, as well as a summary of the perceptions we heard from the practitioners and managers. Part II is a more detailed description of the current initiatives from the community scale up to the international level. An initial effort to build a database of indicators above the community level, yielded over 800 indicators.

At the community level, there is a more holistic, integrated perspective, producing quality of life, healthy communities or more linked SOE indicators. By the mid-90s, there were more than 900 community level indictors. The Federation of Canadian Municipalities has put together a quality of life reporting system involving 21 cities with a current set of 30 indicators.

At the regional level, there are several major ecosystems that have collaborative monitoring and reporting systems. This is where wholesale collaboration among all stakeholders is occurring. In some of these cases, the indicators are being used to measure progress towards objectives.

At the provincial and territorial levels, a collection of approaches exists. Some provinces have kept a comprehensive state of environment report, producing theme reports in the years between big reports. Some have evolved their programs into sustainability reporting. Some have produced SOE modules on different issues publishing on as completed basis. Others have focused their attention on producing a focused public indicators report.

At the federal level, periodic reports on certain issues or sectors and shorter indicator based national reports are being produced.

At the international level, indicators and reporting are strongly endorsed and form key components in environmental policy and assessment. At this level, the issues that are being reported on are more similar, and on occasion the same indicator is being used. There is a large commitment for Canada to produce reports and information on progress.

In conclusion, there are a lot of initiatives that are poorly linked and in some cases producing confusing mixed messages.

The strategy was developed to address the problem of mixed messages and to harness the current level of work being done. One key component of the strategy is to develop a reporting system, producing national reports, by better integrating

reporting into the information chain of monitoring, data collection, aggregation and management, synthesis, analysis and finally reporting. This system will take advantage of the technology available to bring data and databases together and will also link initiatives together. Other key components of the strategy are to integrate environmental indicators into planning and decision-making processes, to support knowledge sharing, and to advance the field of environmental indicator development.

# Morning Discussion Corners

## ***Collaboration and coordination between scales***

Example: Great Lakes

Harvey Shear, Regional Science Advisor, Ontario Region, Environment Canada

- Experience is with the State of the Great Lakes reporting system, a bi-national initiative, under the Great Lakes Water Quality Agreement
- There is a state of the lakes conference SOLEC held every two years
- A State of the Great lakes report is produced subsequent to the conference. The most recent version, 2003, is available online in both languages at www.binational.net.
- The State of the Great Lakes reporting system started back in 1989
- Call for the development of ecosystem health indicators under the most recent version of the Canada-US agreement
- In the early 90's the Canada and US governments decided that we needed some public forum to report on the progress under the Canada-US agreement
- It evolved into the bi-annual conference
- In order to report on a regular basis, a framework for reporting was developed
- A series of ad hock indicators were developed that looked at:
    - contaminants in birds and sediments,
    - phosphorous concentrations in the lakes,
    - habitat lose and so on,

***What are the challenges?***

- Used symbols to represent the three scales within the basin:
    - spaceship, the entire Great Lakes system
    - airplane, the lake scale
    - canoe, the wetland or local shoreline
- The challenge was really trying to fit these three pieces together, nest them together. Realizing that there are specific indicators and pieces of information required at a local level that would not be required at a lake or basin level.

- The trick was to find a set of indicators that the parties could report on every two years that represented the health of the entire system but would permit more detailed reporting and analysis at smaller scales.
- Another challenge was how to nest our set of Great Lakes indicators into the national set and even into the North American context. We have issues of scales both ways.
- Started with an analysis of all the indicators that had been proposed in the Great Lakes, 850 in all. Next the indicators were grouped into topic areas and bi-national committees went threw them using a series of criteria to narrow the groups down to something manageable. A list of about 80 indicators was developed.
- An initial challenge was the resistance from some of the groups in the Great Lakes Basin, predominantly the lake scale, because the basin wide exercise was ahead of where they were and they may have felt threatened. All lake managers are on side and see where their piece of the puzzle fits into the bigger picture.
- The challenge was communication, building up the understanding that the basin scale of indicators was not excluding anything that was being done at the lake level, and that what was being done at the basin level was usable at the lake scale.
- Another major challenge was assessing the state. The rainbow illustration of the state in the State of the Lakes report is qualitative because for most indicators we do not have an end point or an objective. No quantitative end point exists.

***What worked?***

- Getting 150+ individuals on both sides of the boarder to work on this exercise
- Coming up with a list of 80+ indicators
- Getting people aware of indicators and what they can be used for
- Getting people in management positions saying they are willing to use them if they are provided in way that is understandable
- Tie indicators into research and monitoring

***What are doing now?***

- Producing regular reports every two years on the State of the Lakes
- Producing a CD with all our information since 1995
- Working on index development
- Will be holding a second peer review in January
- Reporting on biological, physical and chemical integrity
- Producing a series of fact sheets based on the human health related indicators

- Working on a public friendly report, modeled loosely on the Georgian Basin report
- Working on a set of joint indicators with the Plan d'Action St. Laurent and hope to have a set of 6 common indicators.

***Discussion***

***Group A***

- Question of scales integral, and how they link to one another
- SOLEC caught in middle
- Networking
- Communication
- Interpretation of indicators: basin wide, local
- What are the roles of national vs. local bodies
- define who does what at each scale
- Who links the scales? CSIN?
- Start CSIN to make sure work is consistent from the local to national scale
- Takes time (Great Lakes: 10 years). Selection was a challenge, and meeting agencies requirements
- SOLEC has been working for 10 years together and now things are finally starting to work. All the groups have reorganized their roles and are now cohesive.
- In a network groups have to see their own benefits.
- Encourage collaboration through networks and scales.
- Network allows for communication of international info stories to be brought to local level initiatives
- Challenges decision makers and public in selecting indicators and meeting requirements.
- Messages should be consistent at local, at national/local scales – same at basins and lakes scales
- Sometimes different metrics do not satisfy reporting at different international and local scales.
- Looking at searching out information to be able to search out common methods and species, etc.
- Collaboration with various agencies means agencies can come up with different messages. Optimistic pessimistic messaging.
- National vs. regional power structure and struggles. Coordination that is central vs. top down control. Agency to act as a catalyst rather than a coordinator.
- Where do our roles lie? Does EC develop data assemblages and local groups develop indicators? Task off the work we have to so we can proceed forward together
- Demonstration of relevance of large scales to individuals who want small scale information and vice versa.

- Everyone wants local scale and national scale information.
- Rolling up of information – who has this role and are we losing scientific certainty?
- Indicators have to be jointly reported with relevant, easy to understand information
- Satisfaction of research community with the information that is generally reported out.
- Accounting does not use much information
- User and contributors of information – the information that is reported may not be useful to the individual who needs to use the information
- Collecting of information, what data do we have, what is useful – where are the gaps and what should be continue or start to monitor again.
- Balance between the science and the monitoring effort
- Translation and integration of information

***Group B***

- Some indicators may not be able to be rolled up, i.e. spot-billed shivers but could use overall fish indicators, i.e. near shore forage fish.
- Need to pick metric.
- How did they select 80 indicators from 880?
    - Data availability
    - Criteria – necessary, sufficient, feasible
    - Had 7 expert panels – whittled them down, done at science level – decision-makers brought into process in 1998 via attendance at SOLEC, continuous open process
    - Not getting into social or economic – only as they relate to environmental aspects
- Gulf of Maine Council – approach
    - Step I – involve the decision makers
    - Their 1 indicator that was identified as key was “mussel watch”
    - Wanted to take other studies from 300 monitoring programme & integrate into their study
- SOLEC – constrained by parameters of Great Lakes
    - GLWQA – decision makers had already identified what they wanted measured in that process
- How was community involved in determining what is sustainable? Through areas of concern and RAP (regional area plans) process – multi party, stakeholders process to develop own vision of sustainability for the lakes.
- Needed to make some compromises in goals / how much you want to spend
- Established minimum standards for water quality
- Have to balance tradeoffs
- Difficult to set targets when ecosystem flips, not predictable
- Action plans for SOLEC?

- Legislative process will manage – can't make recommendations because it would be like self government
- Don't point fingers
- Identify key problems

***Written Comments based on Questionnaire***

*What have you learned from the discussions? What was different or original?*

- Monetary basis for indicators problematic in the equitable consideration of "social" values.
- Standardization of protocol methods not so big an issue anymore
- The different ways that users can be involved in the process.
- That much progress has been made in working across scales.
- Importance of building a sense of community
- Need to consider temporal scale in addition to spatial. Ecosystems are dynamic, changing and difficult to set targets.
- Reaching out between scales
- Is the "network" the coordinator
- Collaboration takes a long time/have to see your own benefits
- Networking/communication
- Challenge in meeting different agencies requirements
- What is used to measure can often be common
- Conflicting messages from different scales
- Different perspectives. E.g. Local=personal experience
- A coordinating role cannot be to forward particular agendas. Each group as benefits they are seeking. One option is provide tools
- Data driven – user driven. NPRI (National Pollution Release Inventory), is it useful? Not weighted.

*Are there any aspects or angles that were not covered in these discussions?*

- Concept of sustainability across "sectors" i.e. what does economic sustainability main for ecological sustainability?
- Was interested in how data are rolled up to the different levels
- No, both discussions were comprehensive and thorough
- Nested hierarchy of indicators

*Is it your impression that people share and agree on the same vision and the same vocabulary in this field? Or, are there positive and negative common elements you can identify from the discussions and your experience?*

- Concept of "scientific" uncertainty is not universally understood, nor is its impact on the communication of indicators to "users"
- Yes

- Same vision, although there is a strong tendency to try and standardize data and collection methods. There is a recognition that to local decision makers is much more important than standardization.
- There is sharing of vision but there is a need to look at standards, translation

## ***Incorporating indicators into decision making***

Example: Minerals and Metals Indicators Initiative, MMI
Scott Clauson, Natural Resources Canada

- In the mid 1990's the Government of Canada's policy came out on mineral and metals which called for the development of sustainable development indicators for the sector.
- The first phase of the MMI process was in 1999 where we convened a number of stakeholder groups to discuss sustainable development values.
- The second phase started with increase funding. The framework is still in the development stage.

Minerals and Metals Indicators (MMI) is an undertaking and framework to enable decision makers and other communities of interest to better measure the contribution of Canada's minerals and metals sector to sustainable development.

The framework is a conceptual model and tool to guide indicator development and selection and to define, monitor and communicate Canada's minerals and metals progress or status at the national scale, with an additional goal of facilitating more locally and site-specific indictor identification initiatives. MMI sets out to identify national scale indicators progressing or regressing with respect to sustainable development. The framework provides a working definition of sustainable development among communities of interest.

The framework methodology used by MMI as a basis and structure from which to describe sustainability and identify and cast various indices is Robert Prescott Allen's Wellbeing Assessment Framework.

The Wellbeing Assessment Framework is broken down into two areas

- Ecosystem: land, air, water, species and genes, resource stewardship and utility
- Human System: health, prosperity, knowledge and culture, social cohesion, equity

The indicator hierarchy is divided into 5 levels

- System: the whole of Canada's environment, economy and society
- Subsystem: For our purposes there are 3 subsystems
    - Human subsystem
    - Ecosystem subsystem

    - Sector subsystem
- Canada's minerals and metals sector includes activities within the mining life cycle and the product life cycle
- Dimension: distinguishable but inter-related components
- Element
- Indicator

Sustainability gaps in the Minerals and Metals Industry

- A lack of public trust and confidence in the industry
- Engagement - failure to engage stakeholders in meaningful way. This is often a major issue
- Capacity
    - A lack of capacity to define and implement sustainable development
    - Capacity building via local participation and capacity building

***What worked?***

This work is still in progress so it is difficult to make conclusive comments in this regard. Notably, the things in progress that worked the most include

- Greater consensus on Key Issues
- Issue identification is feasible

***Challenges while trying to use indicators in decision making***

- Lack of methodology, context, and data
    - Must be defensible to justify decisions
- Lack of integration and follow through
- Inherent uncertainty in ecosystem dynamics
    - Constant change, surprise
    - Same for human system
- Another challenge is assigning weights.
    - Although extraction or pollution may be a huge indicator that detracts form ecosystem wellbeing, the products derived from it may be used in infrastructure or tools that may enhance quality of life and individual capacity or opportunity.
- Linking national indicators to local action
    - There must be continuity between local scale indicators
- Understandable
    - Indicators can be complex. They must be understandable by the public and decision makers.

***What are we trying to do right now for decision making?***

We are doing nothing in terms of decision-making. We are working to justify the utility of the framework with senior management and to secure sufficient funding

for a Phase III in which we prototype actual indicators and develop the information transfer structures and linkages to do so.

***What is the largest benefit we've attained?***

The big benefit is the recognition of complementation among issues and objectives that once had seemingly irreconcilable dimensions. This initiative has great capacity to link with numerous other initiatives such as NRTEE's ESDI initiative.

***Discussion***

***Group A***

- With minerals and metals initiative
    - Been having difficulty integrating the different perspectives.
    - NRCan trying to get a discussion going within industry
    - Inform about the develop certification system, social certification.
    - To get the issues circulating.
    - They are not at the stage were they can influence decision makers. They are still only in phase 2. They have to get agreement on the indicators first.
    - Regional differences: applicable nationally but can be used locally.
- The first step in any journey is the most important.
- Disconnection between what we are learning and what is being done.
- Connecting between data and what is done with it.
- How do we link the indicators at the local level to the regional and national level?
- Where are we going to get the most bang for our buck? Targeting capital assets investments.

We're interested in examples that people have of indictors being used in decision making. Maybe able to use the examples to look at what works/doesn't work

- Atlantic Coastal Action Program
    - They have been conducting community based monitoring.
    - They get regularly reported in the news paper. Basic reporting method but it is very effective.
    - No link between policy and reporting on conditions.
- Is there a gap between reporting and decision making process?
    - Public pressure is driving the decision making process. There is no link between policy and reporting on conditions. Coastal action is not directly linked to the decision makers.
- National Pollution Release Inventory NPRI
    - There is a lag period for reporting (may be 5 years). Limitation with large reporting systems is the lag time and tracing back to specific industries. The pertinence of this. Little is being done

- Results are well founded. Based on good science. But a big challenge on getting people to understand data and significance.
- Where are indicators targeted? Must be clear. Efficiency and use of finite resources
- Communication skills are very high (forest report). The message gets out to the citizens. The results are based on good science. They are well founded.
- How do we get them into the decision making process? Where are the indicators targeting (general public, bureaucrats)? May need different indicators for different groups. Does it make sense to target the public and have them fight it out in the papers or target bureaucrats?
- Audience-local people, bureaucrats or politicians – to effect change.
- Engage those who have most to win and lose in decision process.
- GPI engages those who report & must respond. Transparent – anyone can dig around in the information. Biophysical accounts & socio economic tool systems.
- Need to connect collectors of data with decisions making processes and determining which policy instruments is most effective – fiscal, regulatory, monetary, voluntary. What context are they appropriate
- We have lots of information/tools that are not being used
- Challenge – getting aggregate indices to inform policy debate
- Data is only one component of policy decisions. Must make significance of data saleable.

***Group B***

- Communication barriers
- How do we get access to the decision makers?
- How to influence policy – cultivation of relationships. Receptivity. Finding channels
- Lots of data being collected but needs to bridge into the decision making arena.
- How do you influence decision makers?
- How do you cultivate relationships with policy makers?
- Finding pathways/channels to the decision makers but this is dynamic, moving target (policy)
- SoE's are subject to political scrutiny. Release of SOE reports are at the whim of the politicians. They don't want to release bad information
- Need to collect data that is both relevant to decision makers/politicians as well as the general.
- Numbers are not sufficient
- Indicators are abstract. Answer the question "so what?" What is the importance or relevance to the different groups? Difficult for people to understand terminology. If they don't understand the terminology, why will they care about the indicators?

- Quantitative vs. Qualitative – choose those that are meaningful and understandable.
- What message is sent? People must see their role. Should reduce conflicting messages.
- Subjectivity of indicators.
- Some indicators may not seem that relevant but they are meeting government mandates.
- What is the rational for indicator choice? Why are certain indicators chosen? Must put rationale on indicator choice.
- Indicators to influence decision makers. Should be a bottom up decision. The public influencing the decision making process. Help to overcome barriers (ex jurisdictions)
- Two way street. Public inform/influence indicator development. Indicators to inform public. To provide them knowledge.
- The indicators must stand up against pressures
- Good mediums of communication.
- When is giving something a monetary value a good method to communicate with decision makers?
- People's priorities - health, health of the environment, and then economic are listed in order of importance to individuals??
- Need to communicate both the short term, and long term problems associated with the indicators. The long term consequences may not be communicated effectively.
- Externalities - $$, dangerous to, dangerous not to.
- Decisions relative to pressures
- Indicators inform long-term consequences but this message may not be getting out.
- Need to get the right indicators to the right people in the right format.

***Written Comments based on Questionnaire***

*What have you learned from the discussions? What was different or original?*

- Indicator development hampered by political whim (i.e. NS and Ontario has withheld certain state of the environment reports)
- Bottom up indicator development has stronger potential to influence policy.
- Rationale for choosing indicators – adapted to either community level or policy-makers.
- Monetary value not always 1$^{st}$ priority at community level.

*Are there any aspects or angles that were not covered in these discussions?*

- No good examples of how indicators used for policy
- Good comment on using caution to interpret indicators

- Not enough examples. A little theoretical

*Is it your impression that people share and agree on the same vision and the same vocabulary in this field? Or, are there positive and negative common elements you can identify from the discussions and your experience?*

- We are in "early days" in terms of using indicators in policy, but there is an urgent need to develop useful conduits. The "policy-makers" targets are multi jurisdictional and an "unknown"
- Yes, expertise of some participants very helpful.

## ***Linking environment, social and economic indicators***

### ***Example: Genuine Progress Index***

Ron Colman, Genuine Progress Index (GPI) Atlantic

- GPI Atlantic is a non profit organization
- working for close to 7 years to construct a set of measures of sustainable development for Nova Scotia
- set up so it will be useful as a pilot for other jurisdictions as well
- transparent methodology so that other jurisdictions will be able to use it
- on one hand for Nova Scotia but we're also trying to do it in such a way that the measures will be useful for other jurisdictions
- began in 1996-1997 with an 18 month process of consultation and literature review
    - the result of which we selected a framework and indicators
    - Also as a result of consultation with Statistics Canada, we decided to create these measures one component at a time.
- We had 22 social, economic and environmental components in the Nova Scotia General Progress Index. We are not striking for one bottom line. We are constructing each component of the index as a stand alone unit while trying to demonstrate the links between them.

There are three fundamental types of links that we've been trying to demonstrate.

1. Conceptual or framework link
2. Inherent or intrinsic link that emerges of its own accord when we get deeply into the data
3. Strategic or communication linkage between the sets of indictors.

Framework and conceptual links:

The linkage comes from the capital accounting framework selected for this work. For the last couple of years, we've been working to expand the notion of national capital to include accounts for human capital, social capital and natural capital. There are various other elements to the framework. We recognize that the human dimension of the capital is dependent on the natural capital dimension.

The framework creates a natural linkage because it establishes the notion of intergenerational equity. Once we have the notion of capital, which is subject to depreciation, and which we apply as reinvestment, we are starting to use economic language in a way that establishes a big time frame. Over what period of time does a forest depreciate? What does it take to reinvest in a forest after a clearcut to restore its value. We use economic language in that frame work.

Intrinsic and inherent links:
Within the framework, if we look at the natural capital side of things, natural capital can clearly be approached again using economic language from the supply side as well as the demand side.

In my own view, the supply side view alone is potentially dangerous. If you look at the supply of natural resources, if there is sufficient supply than the onus of sustainability is inevitably on the harvesters. Are the foresters harvesting sustainability? Are the fishers fishing sustainability? Are the farmers practicing sustainable agriculture? This leaves the rest of us off the hook.

However, if you take the concept of natural capital and look at the demands being placed upon it, than the linkages become very clear. Human activity clearly places a demand on natural capital. That investigation naturally raises other social issues. Wealthy nations and higher income groups place greater demands on natural capital. Once we begin looking at things from the consumption side, then equity enters into the equation. The Bruntland Commission and Statistics Canada have recognized that.

Strategic and communication links:
There is only a small group of us interested in environmental indicators. A challenge we have is how to penetrate the world of conventional policy, how to penetrate the finance ministry. We found that the language of economic evaluation is a very useful tool to penetrate that bigger arena. The one thing that distinguishes the GPI approach from other excellent quality of life indicator approaches is that it does try to draw the connection back to the economics. What is the economic value of this asset? What are the costs of this asset depreciating in value, whether applied to natural, human or social capital? The ability to link the natural capital dimension to the economic valuation process actually has some success in penetrating areas were otherwise we may be thought of as tree huggers

### *What are the challenges?*

The biggest challenge is funding. Government needs to decide if they want non-profits organization involved in this work or not. Ten of the GPI components are environment indicators and over the past seven years we've only received $27.500 of funding for this area. This is not enough money to do the job. We funded almost all the work ourselves by doing contract work on the side.

We have 16 or 17 of the 22 components developed. The most difficult ones (education and energy) have been left to the end. They present the most challenge and we are currently working on them.

***What are the benefits?***

There is no simple way to evaluate the success. In the social and economic world, it is easier to see a connection between the research we conduct and policy interest and uptake. We have had success in Nova Scotia in some of the health related components being used by government. It is not as easy to see in the natural capital and environment indicator side.

## *Discussion*

### *Group A*

- Integrating environment, economics and society.
    - So many subcomponents and overlapping interests like climate change and transportation.
    - How do you bring these elements together and make them relevant at the policy level?
- How do you incorporate indicators of sustainability which have overlapping areas of concern into policy?
    - Policy is so specific – departments do not have overlapping areas of legislation.
- Health is an overarching area. Easy to make progress
- Ecological footprint - Nova Scotia, PEI, Manitoba
- Social / economic are about people. Environmental is disconnect because not about human beings. We are self-centred and cannot bridge the psychological gaps.
- Social language needed to reach people
- What does a sustainable society look like?
- Sustainable Calgary - Sense of community, Social cohesion
- Community base monitoring fosters stewardship
- Capacity building
- Community engagement
- How do you reach economical and social objectives at the same time?
- How do you demonstrate cost effectiveness?
- Valuing $ indicators can be effective and controversial.
- Monetary ($ value) as a strategic tool
- Balance econ ($) with social, and environmental
- Indicators provide information for the directions that we have to move in
- Environmental #s can change the social agenda
- How can indicators be used to change behavior?
    - Larger context links

- Unless you are talking about Stats Can data, how can we obtain information and how can we be assured of its consistency?
- Scientific uncertainty of some indicators
- Think of uses for applying data.
- Where are the indicators being developed and who is the decision maker?
    - Is it the individual / personal choice;
    - Is it a provincial-scale legislative decision?
    - We develop middle ground mediocre indicators right now that satisfy no one.
- Who should be developing these indicators so they are relevant and useful on all scales?
- Use of future visioning to develop indicators.
    - "What world are we leaving for our children" – people can understand list.
- In theory there is a causal chain from personal to drive political change.
    - Indicators can help in driving this process.
- How do we provide better quality of life indicators?
    - An area can score on these categories and do well – yet it can be an awful place to live.
- Shifting of social justice agenda
- Educational role needs to be developed behind indicators.
    - How do you develop an indicator that is not susceptible to misinterpretation? And that are seemingly agenda free.
- Political agendas – there are common consensus values like clean air, water, etc.
- Traditional economics completely ignores the environment
- Easier in Atlantic Canada – experience has demonstrated environment and economic interplay. Collapse of fisheries resource demonstrated.
- Disconnects of information from federal and local sources. Opportunities are lost such as with ocean being warmer and Hurricane Juan being stronger – but no correlations were drawn to climate change.
- The above is a good example of information that is presented at a scientific certainty level, federal level and local level.
- Need for rigorous scientific basis
    - precautionary principle and information that can be given in a general way.
- Industry / governments / scientists need to be sold on the value of indicators
- Role for communication of scientific information
    - What is Environment Canada's role in this capacity?
- NGOs can step out a little further, so they are very useful in communication as well.

***Group B***

- GPI Atlantic did Ecological Footprint for Atlantic, IISD doing one for Manitoba
- Would like to see challenge between different groups
- Links directly to human behaviour – great communication tool
- Equity issue made very clear when looking at Footprint internationally
- One of the more powerful ways of linking the indicators is through valuing, using accounting
    - Easier to put head around than Footprint
- Monetizing can be a tremendous barrier
    - good way of getting people "on board" but doesn't get people to fundamentally value social / environmental portions
- To reach boardrooms use dollars. To reach people use social language.
- Gulf of St. Lawrence – social aspect very important but need to illustrate interplay between factors necessary so don't overshoot environmental limits
- Need to include institutional sustainability as another category to be integrated
- Fear of making $ what is valued
- Need to start with monetizing then move towards other mindsets
- Back casting demonstrates our current neo-liberal economy will not lead us to the desired future. If you continue to perpetuate this ideology, it will not get you where you want to be
- From a health promotion framework – use population health approach.
    - Looking at sustainability of communities in Nova Scotia – have Coastal Communities Network – their language is "health communities", "quality of life".
    - The economic part is important
- Need various methods of talking about things on a sustainability scale
- By showing linkages it identifies where the power is
- Use monetization as a tool only
- In an ideal world all decisions would consider social and environmental aspects but it doesn't
    - Need the monetization tool
- Use dollar value to point towards underlying physical indicators so that the physical indicators are identified
- In health build using $ as identifying health issues – did make a light go on
- Depends on audience. In natural resource industry it didn't make much difference because the $ did not affect their budget
    - what you communicate - need to look at audience
- How can environmental indicators inform social policy
    - Pushes us to look at equity from both sides. Can shift social policy agenda by looking at ecological limits
- Sustainable Calgary using "sense of community" as an indicator
    - what does this mean?

- How can you measure social cohesion and similar type measures? How can you convey what policy decisions would mean on the ground for social & environmental decisions
- How do you reach people?
    - Education – speak in terms they understand, reach out to youth, natural history / local history education
- GPI – difficult to get at accurate measure of education
- Community based monitoring is an excellent tool for community engagement, education, capacity building and social capital building.
    - Gets people out there in the environment and fosters a stewardship ethic
- Need tools to reach the whole community – don't need to necessarily improve science but need to focus efforts and communicate
- People want to know what they can do to make a difference

***Written Comments based on Questionnaire***

*What have you learned from the discussions? What was different or original*

- Better understanding of the problems surrounding valuation of environmental entities
- Challenges ahead in linking indicators to strategies for changing lifestyles
- Importance of language and simplicity of concepts
- Importance of building a sense of community.
- Ecological footprint good tool for showing relationship of environmental indicators and human behaviour
- Assigning monetary value can be barrier for progress in environmental conservation
- Community-based monitoring fosters stewardship
- Good examples given
- Incorporating environmental indicators into economics can actually reduce the need for government intervention into economy and society
- Difficult to set target on ecological footprints. Supply side is focus of large scale reporting, but demand side is to the grassroots, community level. Need to limit supply side reporting with demand side issues.
- Policy level and local level need to see where the links
- Policy silos
- Social/economic indicators "about us"

*Are there any aspects or angles that were not covered in these discussions?*

- How the indicators were developed (more detail) would have been interesting
- No
- No, discussion was comprehensive and thorough

- Frameworks/models

*Is it your impression that people share and agree on the same vision and the same vocabulary in this field? Or, are there positive and negative common elements you can identify from the discussions and your experience?*

- Yes
- Yes, good variety of backgrounds and opinions.
- Good agreement on vocabulary and vision
- Same vision is shared. Need to talk he same language (i.e. economics) that makes sense with companies and government.
- Scale also important
- Put "story-telling" format
- Base "consensus" values

## ***Stories about how data accessibility reduces barriers and enables better decision making***

### *Story of the BC Water Quality Index*

Risa Smith, Environmental Reporting Branch, Environment Canada.

Once upon a time, in the far, far west coast of North America, there was a province famous for its fast flowing rivers and its gorgeous lakes. Visitors to the province got a lot of benefits from these water resources. They ate the fish, they swam in the water, they drank the water and they appeared happy.

There were people in that province whose job it was to collect data on those lakes and rivers. They had boxes of index cards full of information on the quality of water in those lakes and rivers. They would talk to each other and analysis and think about how that water was doing. They noticed over time that some of that water was in bad shape. They tried to tell their bosses but nobody could understand them. They got very frustrated.

There is very smart people in that far away province. They decided to develop an indicator that aggregated all the complex water data and called it the Water Quality Index. They applied this index to 133 water bodies. They found out that most of the water bodies were in excellent shape but 7 of them were very bad. You could not eat the fish; in fact many of them did not even have fish. You could not drink the water or even use it for irrigation.

When they tried to tell their bosses they used this very index to communicate with them. They rolled up the data in a very simple way using the Water Quality Index and their bosses got the message. The bosses were very worried because

they got the message. The bosses decided that they needed to tell the citizens about the problem but also tell them they were doing something about it. They decided to develop action plans to make the water quality better in those 7 water bodies.

When the bosses put the index out, they also told the citizens what they were doing about it. The citizens already knew that those water bodies were not very good because they lived there but they were very happy that action was being taken.

We want to develop a storybook of indicator development successes. It can be used as a resource for convincing managers about the importance of indicator development and to demonstrate that access to information makes better decision making.

### *Discussion*

### *Group A*

**Story:** Not sure if aware that in NB in public hearing about doubling the wood supply in next 10 years. Real issue right now – there is data but picture is not completely clear – they have crown land, but they are not looking at private sector – which is 30% forest companies – 30% of private woodlot owners for a total of 60% of provincial forest land. This could have disastrous consequences.

- How will you use information?
- With Fundy Model Forest – funding for private versus public work is not the same. Need maps to get the story.
- If you could show it graphically it would make a difference?
- NB has published its GIS based forestry maps – NB is more advanced but not necessarily to make decisions.
- Many decisions are based on government objectives and/or on industry tactics.
- How would you get better info or better access would it be better used?
- Not just a case of better info – but kinds of information – kind of community engagement.

**Story:** What is happening on the ground in communities? There are good stories about managing watersheds and community involvement in this. There is a group in Hope-Stanley Watershed (PEI) that is supporting an organic watershed. Something that is being talked about. Instead of going at it with a technical scientific approach – NSAC in Truro. There are diverse users who are interested in this concept – potato grower, golf course, etc. Will be a beautiful story but not for 10 years.

- How would they use info?

- Plenty of monitoring going on. The real kinds of info that will make it work will be the understanding where data comes from – not just the level of nitrates in water but in what the relationship of users with land.
- What you need the most is the social links.
- PEI uses public meetings but doesn't use techniques like story telling
- NB is discovering that they just learning how to use indicators to influence decision making. In the end, when you have an indicator you have to ask "So what?" If they don't mean anything they won't be used.
- First time happening in NB, instead of just developing strategy and putting it to the public, they are having regional meetings which brings a different response.

**Story:** GPI Atlantic – biggest challenge is information gaps. The success of GPI work is due to its close link with Statistics Canada. In the last 5 or 6 years, Stats Canada has been very good at posting free information on the Web. A leap was taken to do community footprint project work. Two surveys, one in Glace Bay and one in King's Country were done to collect community level indicator information. The surveys were designed with community input so information collected would be valuable. It was very successful even though it was a time consuming and costly but worthwhile. Decided to use ecological footprint – successful because report was produced but because of limited data too many assumptions are being made. Process has a preliminary block of information availability.

**Story:** Encountered gap problem while working on Environmental Impact Assessment in NL. Did an entire NL EIA but when gaps were found it was difficult to use other info compiled for the study. In preparing an Environmental Impact Statement, people want to know that at a very local scale the project had a real impact. This is difficult to say at a local scale.

- Example: Kyoto efforts – people want to see that local impacts can be had. Could have made a statement about expectations, but would have been more helpful to have a uniform credit system to use to be able to make a statement like that.
- You need a place for the community level to put in their info so that it can be put into the bigger picture – national level.
- It would have to be accessible not only to community groups, but to private industry for example – if they implement a sustainability project.
- Registry of projects – but also registry of results.

**Story:** In NB, many people are still building in places where they are vulnerable to weather events.

- Would like to see costs of fixing the problems again and again.
- We don't seem to learn from our mistakes.
- There's a strong denial in communities
- Similar example in BC interior of people who still build homes in areas that burn

- Land use planning issue – how would better info solve that
- Insurance industry is building in the risk factors in their premiums.
- View is that government will help out in disaster.
- Great to have a central database where people could access information.
- That's what CISE is all about
- Costly to maintain, people demand info, it's out there if you take a look
- EC does projects and then loses institutional memory – plagues all institutions.

**Story:** Gulf Island – Galiano Island. Unusual because 57% is forestry zoned land – privately owned as opposed to 94% public owned elsewhere in BC. Situation on local level here is quite different. People realize that if they could graphically show the impact of forest land on watersheds. They went to EcoTrust – also company called EZRA that does eco programs. Community of 1000 went to the agencies and got trained in state of the art technology. First problem in order to map the land use was to get recent maps. In that context fundraising was done to get fly over to get recent maps. Community learned how to do this. Map was created. Created a map of sensitive areas. Company asked for this and then they said they would review logging practices in areas that community identified as sensitive. Mapping led to better corporate decisions. Next step was to have this happen on a wider scale over Vancouver Island. This mapping was then done and the result was shown to communities and companies. Result was creation of a Forest Land Reserve. Rules were set for what could be done for what should be done with this land. Community awareness of the bigger context. Just the mapping, community based and ENGO support started the process that led to legislation in the form of a Land Reserve. It was a big effort to do the work but it was very exciting project. Former mapping work was not electronic. Someone from EZRA was that and was motivated to help.

**Story:** Similar story from BC – BC Grassland Conservation Council. Small interest group was interested in elevating awareness of grasslands. Identity in BC was of forestry intense land forms. Council got money to hire a GIS expert. This area was mapped and ground truthed by region. Series of electronic products were produced to demonstrate grassland characteristics and biodiversity issued that related to those areas. It was an "Ah Ha"

- Getting info gaps filled – issue of interchange between monitoring and sustainable development is a challenge. There is a need for lodging.
- Suggests looking at Sustainable communities Initiatives of GeoConnections (NRCAN)

***Group B***

**Story:** ESRI runs ArcInfo (GIS systems)

- EcoTrust trains communities on how to use GIS.
- Did demonstrations – brought international audience in to see the results
- Social offshoot – community got training with state of the art tools where they would not normally have had the opportunity to do so.

- Direct impact on decision making as a result of this effort.

**Story:** Using GIS system for a community resource management of practicing traditional activities

- Even they have been promoting the area to be protected – even though territory has been clear cut 3 times – 200 years of logging.
- Community in QC (Atikamekw first nation) central boreal forest area with public land, traditional areas, first nations
- Experience was great
- 1st traditional knowledge Database - Mapping and gathering of info
- Interest in this information
- Provided to government
- Real interest by forestry companies to prepare their management plan.
- By capturing TEK in a Database, it allowed for input into land use, education, and community decision issues.

**Story:** Gitsaan First Nations groups in BC are very interested in GIS in mapping their special areas for wildlife and TEK info – their maps are much better than government maps – they have been able to have their knowledge brought into harvesting plans / wildlife mgmt plans. Products are better and far better resourced than others. They have the best info so that is that is what is being used.

**Story:** Investment community and interest in indicators for corporate disclosure. Carbon Disclosure Project – 87 investors – large mutual funds – pension funds $10 Trillion in investment dollars. Fund managers - We don't know how much liability we are exposing ourselves to – top 500 companies are being approached to disclose their carbon impacts. Surveys have been done. UK entity is spearheading this initiative – multi stakeholder involvement

**Story:** TEK can be indicators for SOE from one time era to another.

- Story telling as a way to talk about the SOE is very compelling.
- Story of creation. 4 brothers – white, black, red, and yellow – all will come back to the red brother because he has stayed in touch with the natural world. With all our sophistication we've lost sight of how to communicate things.
- At a meeting in Saskatoon a few years ago, I stood up and suggested that we should explore the use of storytelling as a means of looking at issues – they looked at me like I had three heads. I was more optimistic about the prospect of storytelling when I saw Risa tell her story.
- Concordia has faculty specializing in storytelling / TEK issues. People are connecting with this way of interpreting the environment.

**Story:** Ongoing story of the Southern Gulf of St. Lawrence Watershed (based out of Moncton). Group is compiling a sustainability index. Started with a blank slate, reviewed a number of initiatives and found incredible amounts of info on

display at the international level (i.e. OECD). Came back to Canadian level and looked at the "multiple heads", including EC, and finds that he can't get data. Where he expects to find data, it is very costly to acquire. It's watering down the science. He's trying to get around it.

- Shouldn't have to get around it – CISE is a conceptual set up to solve the access problem. Problem is data ownership – many owners do not want to share.
- NS Environment – how do we make data more accessible? Problem that is well recognized. Review of databases – we're good at collecting it. Some examples:
- Endangered species – type of lichen on COSEWIC list – 40 sites have gone down to 1 tree. Picked an area, plotted on GIS, and used GIS to get 2nd record for Canada. 2nd record was in a protected area rather than in a logging site
- Oil is primary heating source – pressure from insurance companies to regulate oil tanks – her first question was how many spills and what are the causes? Answer given was it's the age of the tank. Quickly found out that it was corrosion of steel – not based on age of the tank. Other issue was certification to install it was a concern. Informed decision Spill data was available from 2 sources.
- Air emission: ON did good job of putting impacts around health. That approach when it came down to Atlantic/Eastern states was able to provide evidence of a significant reduction in health costs by putting monitoring equipment.

***Written Comments based on Questionnaire***

*What have you learned from the discussions? What was different or original*

- The concept of an "organic watershed"

*Is it your impression that people share and agree on the same vision and the same vocabulary in this field? Or, are there positive and negative common elements you can identify from the discussions and your experience?*

- Everyone wants databases or clearing houses for information, but in many cases are too lazy to seek out the information on their own.

# Summary Comments

***Collaboration and coordination between scales***

- Communication is key.
- Recognize the different scales and their overall role.
- Message, the difference in interpretation at different scales. The message might be different but needs to be consistent.

***Incorporating indicators into decision making***

- Credibility with decision makers.
- Might need different indicators for different scales.
- Relevance of indicators to different targets.

***Linking environment, social and economic indicators***

- The broad based knowledge that people have of the issues.
- Is it important to put a monetary value on the issues or is it a barrier
- Is not using monetary value a tool to reach an audience that is concerned with money?

***Stories about how accessibility reduces barriers and enables better decision making***

- Aboriginal and traditional knowledge and tying it back.
- What are all the top 500 industries doing about the problem?

# Afternoon Presentations

## ***Knowledge Management***

Andre Champoux, Knowledge Coordination Office, Environment Canada

***What is knowledge sharing/management?***

- Knowledge management focuses on how an organization identifies, creates, captures, acquires, shares, and leverages knowledge. – *Melissie Rumizen, Ph.D.*
- Knowledge management is a systematic process for acquiring, creating synthesizing, sharing, and using information, insight, and experience to achieve organizational goals. – *Adam Gersting*

***Why do we need knowledge management?***

- Pressures
    - Increasing demands but few new resources
    - Rapidly evolving information technologies
    - Large number of staff retirements, causing a loss of corporate memory
    - Recruitment, development and retention of staff – competing with private sector
- Responses
    - Improved collaboration, innovation and risk-taking
    - Improved information exchange to support Canadian's decision making
    - Only 30% of the information is in a format accessible to everyone
    - More departmental approaches and less "one-offs"
    - Encourage learning on the job

- Capture knowledge of departing staff

***Knowledge management at Environment Canada***

- The Knowledge In the Service of Canadians KISC Charter was adopted in September 2002
- Opportunities to think, discuss, and organize knowledge management within Environment Canada
- Developing technical tools to improve knowledge sharing and development
- Resources to advise employees about knowledge management

## ***Communities of Practice***

Zita Botelho, Knowledge Coordination Office, Environment Canada

***What is a Community of Practice?***

A group of people who are willing and able to:

- Help each other
- Who share a concern, a set of problems, or a passion about a topic
- Who deepen their understanding and knowledge of this common area of interest by interacting on an ongoing basis

***Three elements of a Community of Practice***

- A domain of knowledge
  - An area of shared interest
  - Creates accountability to a body of knowledge
- A community of people
  - Build relationships
  - Develop the practice
  - Interact and learn with each other
- The shared practice
  - Develop and share knowledge
  - Lessons learned, tools, frameworks

***What does a Community of Practice look like?***

- Self-governed through a governance structure, principles and conventions
- Shared leadership of members and some form of facilitation
- Generate knowledge that supports the practice
- Collaborate via multiple channels

***Types of Communities of Practice***

- Informal
- Supported
- Structured

***Is it a successful Community of Practice?***

- Do members exchange knowledge and develop their capabilities?
- Do members volunteer, based on expertise or passion for a topic?
- Do members have a passion, commitment and identification with the group's expertise?
- Does the community evolve over time?
- Does the community do real work?

Communities of Practise are mechanisms for knowledge management. Most managers still want some type of end product, a report at the end, something tangible. The federal government is starting to use communities of practices more and more.

## Interactive Review of CSIN's Benefits

CSIN needs a set of customized benefits. We are asking you to discuss among yourselves, what benefits you want to receive form this community of practices. If we have our own customized set of benefits, when we're involved in Community of Practice work, we will know what we're there for.

***Benefits***

***The science of indicators and indicator development***

- Help in framing new, local and regional scale criteria and indicators
- Understanding of limitations of indicators
- Awareness of present state of knowledge with respect to indicators
- Learning about the nuts and bolts of indicators through theory and case studies in face to face meetings
- Identify and communicate with others about models, methods, practices and success stories
- See practical examples of indicators from other fields – information about development, challenges etc.
- Encourage consistent methods
- Integrating indicators and extracting social/economic and environmental information
- Bringing in people to test and question the network's goals and activities – critical analysis from multiple communities of interest
- Linking synthesis, analysis and meaning
- Discussion on how to find social/economic/environmental balance

***Learning and sharing***

- Knowledge/information sharing
- Increased efficiency, communication and doing your job effectively
- Improved coordination of indicator reporting and reduced duplication

- Collaboration opportunities
- Contribution to a team
- Forum for conversations: face-to-face, web based
- Share learning and best practices that are practical
- Getting different Canadian/regional perspectives
- Informal review process for current activities/ideas
- Draw on diverse expertise of people in the network
- Testing of ideas among fellow practitioners - Bounce ideas off other people
- Access to specific strategic information
- Exchange information on practice of indicator development
- Learning opportunities: topic based discussion groups
- Opportunity to ramp up and increase people's (mainly specialists) knowledge of different but related disciplines
- Defining an arena of discussion, too often we do not discuss specifics of work with colleagues
- Closer communication and connection to practitioners
- Personal and professional growth
- Linking sustainability networks (quality of life, healthy communities)
- Connecting networks of people doing similar work
- Stay abreast with developments in other departments and organizations
- Business development/career networking

***Policy***

- Credibility and influence at high level in government and industry (a champion)
- Opportunity to inform policy priorities, better horizontality between groups
- Developing the concepts and implementation skills for sustainable management
- Help in determining the root values behind our concept of sustainability

***Access to data, information, and resources***

- Access to data and expertise on environmental and sustainability indicators
- Access to models, methods, practices and success stories
- Access to funding/grant proposals
- Access to technical information
- Data issues supporting indicators
- Centralized website/clearing house

***Who's Who?***

- Awareness of work in progress and current research
- Roadmap/directory of Canadian resources
- Roadmap of resources within the group. Who is doing what?
- Quick answers to questions, exchange of information

- Direction to people who can help with indicator development (shared resources)
- Get to know people – contacts

### ***Summary of benefits***

After discussion, a list of nine benefits was established.

11. Access to data, information and resources
12. Awareness of what is going on
13. Learning and sharing
14. Working through technical and practical issues
15. Linking to policy – how that works
16. Who is who
17. Skills and development – professional and personal
18. Sharing success stories and how barriers are overcome
19. Collaboration tools (web site – clearinghouse, platforms)

## Priority setting for CSIN activities

***First Priorities***

- establish data, indicator and tool sharing devices / facilities
- web-based sharing facility (who's who, info, data, library, user's guide directory)
- face-to-face meetings
    - national / regional / local
    - engage broad range of actors
- establish a regular, scheduled discussion group (i.e. conference call)
- come up with a common project
- support for working groups
- contact with ISIN

***Second Priorities***

- develop expertise in storytelling – use storytelling as a technique to develop CSIN itself
- virtual events – develop a series on success stories that follow a standard format and are archived on website
- promote innovation for conceptual framework, indicator development & reporting
- website with accumulated knowledge organized
- web-based feedback mechanism
- encourage and facilitate improved access to information
- face-to-face meetings – probably at less than 2 year interval given speed of development in indicator field
- to not impose work upon individuals / organizations as a condition of belonging to the community

***Third Priorities***

- clearing house function for info about contact, activities, data, indicator methodology
- access to indicator trends
- user's guide, classification system(s) for indicators
- methods and issue papers discussion
- coordinate a peer / third party review function
- regional workshops – face-to-face discussions
- local / regional workshops with annual / bi-annual conference

Priorities sent in by e-mail
Submission 1

1. Build a central information and announcements area where all members can post relevant information of interest to the entire community. Possibly including a user's guide to sustainability indicators and/or a directory or classification system for indicators and indicator systems.
2. Establish support for sub-communities and "working groups" who may want to focus on scale-specific, strategic or technical issues, Environment Canada initiatives, a biodiversity index, or making indicators dynamic, interactive and user friendly, while ensuring the linkages are always there with the Network as a whole.
3. Establish data, indicator and tool sharing facilities where participants can give and receive specific directions, files and links to data, tools or indicators that could be used in different contexts.

Submission 2
Regarding my three priorities for CSIN, I would characterize these as "facilitating communication and promoting innovation among practitioners". I have combined some elements from the list that was circulated in order to cheat (i.e., support more than 3 priorities).

1. Establish ways to promote innovation - on the Web space and during face-to-face meeting sessions (such as working groups) - where members feel comfortable posing questions or suggesting new concepts for indicators, indicator development, reporting or presentation and get feedback from experienced members and the community as a whole. [Note – this could be achieved through the "working group" concept and would be similar to the "peer review" concept, and (i.e., combine all of these into a single priority).]

2. Organize face-to-face meetings for all members every two years (allowing for more of a focus on the ISIN meetings during alternate years). Local/regional events and subgroup meetings could occur more often. "Virtual events" may also be planned. Meetings will be planned in association with other conferences of interest to indicator practitioners.

3. Build a central information and announcements area where all members can post relevant information of interest to the entire community. Possibly including a user's guide to sustainability indicators and/or a directory or classification system for indicators and indicator systems.

Submission 3

1. Consult and collaborate with the International Sustainability Indicators network.
2. Create a mechanism to organize the knowledge contained in the answers, conversations, experiments and events.
3. Establish support for sub-communities and "working groups" who may want to focus on scale-specific, strategic or technical issues, Environment Canada initiatives, a biodiversity index, or making indicators dynamic, interactive and user friendly, while ensuring the linkages are always there with the Network as a whole.

Submission 3

1. Establish data, indicator and tool sharing facilities where participants can give and receive specific directions, files and links to data, tools or indicators that could be used in different contexts.
2. Establish ways to promote innovation - on the Web space and during face-to-face meeting sessions - where members feel comfortable posing questions or suggesting new concepts for indicators, indicator development, reporting or presentation and get feedback from experienced members and the community as a whole.
3. Build a central information and announcements area where all members can post relevant information of interest to the entire community. Possibly including a user's guide to sustainability indicators and/or a directory or classification system for indicators and indicator systems.

Additionally, I would love to see links to a comprehensive bibliography on indicator work in different sectors, including print articles and websites showing work of communities/initiatives worldwide on sustainability in environmental and other fields.

## ***Summary of priorities***

After discussion, a list of 5 priority activities for CSIN was developed.

6. Develop tools or processes to share data, indicator and store indicator knowledge – research, guidelines, who's who, establish informal and formal review process
7. Develop a process for CSIN to communicate – face to face, virtually-real time
8. Develop and implement an interdisciplinary indicators project that includes science and policy considerations (linkages)

9. Engage and involve a broader community including visible champions and decision makers
10. Identify ways to incorporate indicators into decision-making

Questions and comments posed around CSIN activities and priorities.

- Operating Principles
    - Integrating with ISIN
    - Ground rules for communications and feedback
- Do we see CSIN as a place to get tools to do our work or do we see it as a place to develop tools?
- A Community of Practice will make job easier. 5% or 20% engagement with the community will bring value to your work. Everyone will walk away with something that will benefit.
- Engage a broader spectrum of groups, also, each one of these items could be integrated with ISIN
- Need a champion and ability to continue the work
- Need someone to articulate work and benefits to senior policy makers
- Communities can play a role as someone who might have the ear of policy makers
- Need to talk about the next steps. How do we step forward from here? We need to establish working groups.
- Important not just to have tools and processes but need to be clear about how to incorporate results into decision making and implementation
- We do have policy makers involved right now?
- We need to know how to operationalize things.
- As practitioners, we need to get our hands dirty.
- Put examples on the table and determine how to operationalize things

# Brainstorming on immediate priorities

## ***Potential Project for CSIN***

- Integrating Great Lakes and St Laurence initiatives. This is an example of a project were different groups are working together.
- If we are going to focus people's attention, then they need something to work on. If they want to work on the project they can.
- The project has to be generic. Concentrate on linkages.
- Could talk about index development. How can you develop an index on fish and wildlife health? Is there anyway to group the indicators?
- This would be a project that everyone from social, economic and environmental could be involved in.
- Project used as a catalyst for interaction.
- Could develop a matrix of indicators.
- DFO are developing an indicator project so that people could see how it works and how it can be implemented in decision making.

- Look at ways indicators have be used to make trade offs
- The problem with environmental assessment is that it is difficult to quantify when you get away from contaminants.
- Compile examples of how indicators could have been used in decision making to achieve different results. The same decisions are being made over and over again.
- Take some biophysical parameter that has been well researched and set criteria for it.
- There has been a language barrier. There is a difference in terminology and how words are being applied/defined.
- What are you measuring? What are you goals and objectives?
    - An indicator is a piece of information that tells you where you are on a continuum.
    - How can you tell if bread is done: smell, crust, sound (these are indicators of the bread being cooked)?
    - The gas gage you have to define the desired level first.
- Defining goals and objectives on a particular set of indicators. The set of indicators needs to be applicable for across the country.
- The mineral and metal project was used as an example of defining goals and objectives, and the framework development for developing indicators.
- Could possibly use some of the mineral and metal indicators.
- How do you define an end point when the ecology of the system is continuously changing?
- Tax incentives that are ecologically significant.
- Maybe bring some of the existing projects that are currently under development and use them as sample projects for input from different perspectives. Eg. Species at risk indicators and are trying to develop economic indicators
- Need to find project that everyone can relate too. Define goals and objectives for a set of indicators that will meet the needs of everyone.
- What is the candidate set? Forestry? The problem is the parameters are kind of obscure.

## ***Tools Needed***

- Easy, simple communication tools: email & web board. Majordomo email group – might need control on who subscribes. Entire group gets messages and can respond to entire group or to individual
- The volume of emails is a challenge to list servers
    - option to get around this is to have a site where people could go to look for postings – a web board
- Some people like a flag to know when items are posted
- Setting things up is relatively easy.
- Is there a way to send out regular “e-flyers” to members to prompt them
    - Need resources to organize this

- We now have rudimentary tools and a discussion area. Using e-board and quicktopic. Re: e-board - capacity is dependent on subscription fee. Mentioned in email broadcasts but not many takers / participants to date
- Application exists to create a searchable database
- Who should house this? Is it appropriate to have EC do this or could another group such as IISD? Is there a problem with an EC-heavy institution do the organizing?
- How can we maintain the CSIN and not be subject to budget cuts or loss of key people.
- IISD Compendium is a natural fit because it's a database.
- Eventually drop the reference to EC and have CSIN as a standalone entity.
- Message boards are labour intensive
- face-to-face is optimal – regional meetings
- Get regional groups and identify a representative to go to steering committee meetings and bring back messages to their particular groups
- The regional group needs to have a reason to meet
- Regional group could be called upon to report on what's going on "on the ground"
- Cumulative effect of capturing discussion
- To add value to signing on to a list – people would have to identify what their work is and who they are – we could build up our membership profiles
- Security issues might come up
- Do we want to keep our profile as public info? It might attract new members
- If working with research with public $ - work should be accessible if appropriate.
- Avoid duplication / make sure this site / tool is "the site"

Working Group on Tools was formed. Dennis O'Farrell will chair this group. Tasks: Contact IISD concerning collaboration, will develop membership list with profiles, participants would be asked to comment / review proposed course of action.

## ***National meeting***

The goal is to have a dynamic meeting to hear what everybody is going in 2005. There should be considerable effort to build momentum for the meeting to guarantee wide participation. Build-up should include the participation of some stars to draw interest. The meeting will consist of workshops organized by leaders or stars. Overall objective is to learn what is going on in and outside your sphere. Meeting will be presentation based, with most people presenting in several concurrent sessions. Could build the subject areas through CSIN – build and design the conference through full CSIN participation – interactive, virtual working group. Two days with the plenary time focused on discussions

concerning ways of moving forward. Should be NGO funding and in kind support. Could build momentum by continuing to tag one day, regional meetings onto other events.

## Parting Comment

There seems to be a great willingness to work together, but in order to transform this willingness into action, we will need to find a focus.

# APPENDIX 1: CSIN Atlantic meeting package


## Atlantic Meeting

*Mixing strategic thinking and knowledge sharing*

Tuesday November 25th, 2003
Casino Nova Scotia Hotel in Halifax

### Purpose

To assist and enable practitioners to share lessons learned, discuss relevant issues of theoretical, strategic, technical, and practical importance, and start developing mechanisms for collaboration among the multitude of indicator and reporting initiatives.

### Agenda

8:15 Coffee, tea, juice and muffins
Review of information provided by individual participants, available throughout the day

8:50 Welcome and introduction to the day

9:00 *Overview* presentation of what initiatives are out there and what are the views of practitioners and managers
Environment Canada's National Indicators and Reporting Office

9:20 Brief presentations by discussion group leaders for the 4 overarching topics.

***Collaboration and coordination between scales***
Great Lakes – Harvey Shear, Environment Canada, Ontario Region

***Incorporating indicators into decision making***
Minerals and Metals Indicators (MMI) Initiative – Wendy Ripmeester, Natural Resources Canada

***Linking environment, social and economic indicators***
Genuine Progress Index, Ron Colman, GPI Atlantic

***Stories about how data accessibility reduces barriers and enables better decision making***
Risa Smith, Environment Canada's Environmental Reporting Branch

10:00 Break out into 4 discussion corners

10:45 Health break

11:00 Rotate to second discussion corner of your choice

11:45 Reflections from pre-selected participants (*reflectors*), plus comments from the floor

12:00 **Lunch** – provided in meeting room

1:00 Community of Practice presentation: what and where is CSIN
*André Champoux,* Senior Advisor, Knowledge Coordination Office, EC

1:20 ***Interactive*** review of CSIN's benefits

- participants will be asked to define three benefits they hope to gain from their involvement in CSIN.
- participants will then be asked to rank these benefits and post them on numbered sheets 1, 2, and 3.
- participants will then review what has come out under 1, 2, and 3 and determine if there is any consensus.

2:00 ***Interactive*** priority setting for CSIN

- participants will be asked to choose the 3 most important CSIN activities ( using the list of activities in the CSIN Accord as a guide), then post them on numbered sheets for 1, 2 and 3.
- Participants will then review what has come out under 1, 2 and 3 and determine whether there is consensus.

2:45 Health break

3:00 Plan A: If there is consensus on priority activities - Workgroup formation

- participants will break out into groups to brainstorm implementation of top priorities, forming working groups if desired.

Plan B: If there is no consensus on priority activities – Open discussion

- participants will engage in an open discussion concerning CSIN priority activities.

3:45 Reporting back from group brainstorm discussions

4:00 Next steps and closing comments

7 to 9 EMAN National Science Meeting: evening mixer, registration and poster session


**Tuesday November 25th, 2003**
**Halifax, Nova Scotia**

# *Workshop on*
# *Strategic Thinking and Knowledge Sharing*

Workshop notes: morning discussions
10:00 a.m.
**Exercise: Break out into 4 discussion corners**

We have heard 4 different and interesting presentations introducing four discussion topics. You will have the opportunity to discuss two of the topics before lunch. Once you have made your choice, please use this template to record and capture the essence of your discussion and reflections.

Please, mark your 2 choices in the following table (1st choice – 2nd choice):

| | |
|---|---|
| Collaboration and coordination between scales ☐ | Incorporating indicators into decision making ☐ |
| Linking environment, social and economic indicators ☐ | Stories about how accessibility reduces barriers and enables better decision making ☐ |

**Question 1:**
What have you learned from the discussions? What was different or original?

| 1st choice | 2nd choice |
|---|---|
| | |

**Question 2:**

Are there any aspects or angles that were not covered in these discussions?

| 1st choice | 2nd choice |
|---|---|
| | |

**Question 3:**

Is it your impression that people share and agree on the same vision and the same vocabulary in this field? Or

Are there positive and negative common elements you can identify from the discussions and your experience?

| 1st choice | 2nd choice |
|---|---|
| | |


**Tuesday November 25th, 2003**
**Halifax, Nova Scotia**

# *Workshop on*
# *Strategic Thinking and Knowledge Sharing*

Workshop notes: CSIN benefits
1:20 p.m.

**Exercise: Interactive review of CSIN's benefits**

You are being asked to define at least 3 benefits you hope to gain from your potential involvement in CSIN. Add a short explanation to each of them on why you consider these benefits important.

| Benefits | Short explanation |
|---|---|
| 1st | |
| 2nd | |
| 3rd | |
| 4th | |
| 5th | |

Community of Practice Benefits Table 1-1 from Cultivating Communities of Practice By Etienne Wenger, Richard McDermott, William M. Snyder

| TABLE 1-1 | SHORT- AND LONG-TERM VALUE TO ORGANIZATIONS AND COMMUNITY MEMBERS |
|---|---|

Note: In each entry, examples of value are listed from more tangible to les tangible

| | SHORT-TERM VALUE | LONG-TERM VALUE |
|---|---|---|
| | IMPROVE BUSINESS OUTCOMES | DEVELOP ORGANIZATIONAL CAPABILITIES |
| Benefits to Organization | - Arena for problem solving | - Ability to execute a strategic plan |
| | - Quick answers to questions | - Authority with clients |
| | - Reduced time and costs | - Increase retention of talent |
| | - Improve quality of decisions | - Capacity for knowledge-development projects |
| | - More perspectives on problems | |
| | - Coordination, standardization, and synergies across units | - Forum for "benchmarking" against rest of industry |
| | - Resources for implementing strategies | - Knowledge-based alliances |
| | - Strengthened quality assurance | - Emergence of unplanned capabilities |
| | - Ability to take risks with backing of the community | - Capacity to develop new strategic options |
| | | - Ability to foresee technological developments |
| | | - Ability to take advantage of emerging market opportunities |
| | IMPROVE EXPERIENCE OF WORK | FOSTER PROFESSIONNAL DEVELOPMENT |
| Benefits to Community Members | - Help with challenges | - Forum for expanding skills and expertise |
| | - Access to expertise | |
| | - Better able to contribute to team | - Network for keeping abreast of a field |
| | - Confidence in one's approach to problems | - Enhanced professional reputation |
| | | - Increase marketability and employability |
| | - Fun of being with colleagues | |
| | - More meaningful participation | - Strong sense of professional identity |
| | - Sense of belonging | |


**Tuesday November 25th, 2003**
**Halifax, Nova Scotia**

# *Workshop on*
# *Strategic Thinking and Knowledge Sharing*

Workshop notes: CSIN priorities
2:00 p.m.
**Exercise: Interactive priority setting for CSIN**

You are being asked now to choose the 3 most important CSIN activities (using the list of activities in the CSIN Accord as a guide – see in annex attached).

| ACTIVITIES | Short explanation |
|---|---|
| 1st | |
| 2nd | |
| 3rd | |
| 4th | |
| 5th | |

### *CSIN Priority Activities*

***Key CSIN activities could include the following, depending on the collective priorities of the network members and available resources:***

- Consult and collaborate with the International Sustainability Indicators Network.
- Organize face-to-face meetings for all members every two years (allowing for more of a focus on the ISIN meetings during alternate years). Local/regional events and subgroup meetings could occur more often. "Virtual events" may also be planned. Meetings will be planned in association with other conferences of interest to indicator practitioners.
- Build a convenient method such that members can contact other members without infringing on privacy needs.
- Build a central information and announcements area where all members can post relevant information of interest to the entire community. Possibly including a user's guide to sustainability indicators and/or a directory or classification system for indicators and indicator systems.
- Establish ways to promote innovation - on the Web space and during face-to-face meeting sessions - where members feel comfortable posing questions or suggesting new concepts for indicators, indicator development, reporting or presentation and get feedback from experienced members and the community as a whole.
- Establish support for sub-communities and "working groups" who may want to focus on scale-specific, strategic or technical issues, Environment Canada initiatives, a biodiversity index, or making indicators dynamic, interactive and user friendly, while ensuring the linkages are always there with the Network as a whole.
- Establish data, indicator and tool sharing facilities where participants can give and receive specific directions, files and links to data, tools or indicators that could be used in different contexts.
- Create a mechanism to organize the knowledge contained in the answers, conversations, experiments and events.
- Organize special events such as the big annual meeting but also lectures/presentations by outsiders, meetings on special sub-topics, etc.
- Encourage and facilitate improved access to information and data regarding indicator trends from all sectors.
- Coordinate a peer/third party review function for member indicator initiatives.

Other activities may be suggested and could take on priority. The group as a whole will decide this when considering revisions to this accord.

# APPENDIX 2: CSIN Atlantic meeting participants

| | | |
|---|---|---|
| Gregor | MacAskill | Dalhousie University |
| Mark | Brownlie | Sustainable Calgary |
| Barb | Buckland | Environment Canada |
| Scott | Clausen | Natural Resources Canada |
| Katherine | Clough | PEI Dept. of Agriculture, Fisheries, Aquaculture & Forestry |
| Scott | Coffen-Smout | Fisheries and Oceans Canada |
| Ron | Colman | GPI Atlantic |
| Nancy | Doucet | Environment Canada |
| Marlene | Doyle | Environment Canada |
| Peter | Eaton | Environment Canada |
| Brian | Frevel | Alberta Sustainable Resource Development |
| Don | Gayton | FORREX--Forest Research Extension Partnership |
| Annamarie | Hatcher | Hatcher Research Associates |
| Al | Jamal | Environment Canada |
| Caspian | Kilkelly | Southern Gulf of Saint Lawrence Coalition on Sustainability |
| Elizabeth | Kilvert | Environment Canada |
| Joanne | Langis | Université de Moncton |
| Karen | Lloyd | Environment Canada |
| John | Morris | Environment Canada |
| Meghan | O'Blenes | Acadia University |
| Dennis | O'Farrell | Environment Canada |
| Diane | Pruneau | Université de Moncton |
| Murray | Rudd | Fisheries and Oceans Canada |
| Bob | Rutherford | Nova Scotia Salmon Association |
| Alan | Samostie | Environmental Impact Analyst |
| Marion | Sensen | Mount Allison University |
| Harvey | Shear | Environment Canada |
| Malcolm | Shookner | Atlantic Health Promotion Research Centre |
| Risa | Smith | Environment Canada |
| Cindy | Staicer | Dalhousie University |
| Liette | Vasseur | Université de Moncton |
| Mathieu David | Vautour | Southern Gulf of St. Lawrence Coalition on Sustainability |
| Serge | Villeneuve | Environnement Canada |
| Jeff | Wilson | Dalhousie University |
| Tarah | Wright | Dalhousie University |