A PARTICIPATORY APPROACH TO WATER MANAGEMENT: IRRIGATION ADVISORY COMMITTEES IN SOUTHERN ONTARIO

by
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Abstract
The Big Creek is a watershed of 723 km$^2$ on the Norfolk Sand Plain in southern Ontario. The Big Creek supports approximately 800 water takers of which 259 withdraw from surface waters. Dry periods in the late 1980s and late 1990s caused decreased streamflows and increased water takings for irrigation. The fair sharing of water within the basin was not assured since there lacked the capacity for effective management of the water resource. Agricultural producers, local water managers and government developed a framework for participatory management of water to ensure both the fair sharing principle and the maintenance of flows for ecosystem services. The established framework consists of a farmer driven water management committee, called the Irrigation Advisory Committee, which is linked to the provincial Low Water Response Program. The Irrigation Advisory Committee provides a structure enabling 1. two way communication between water managers and irrigators, 2. communication between irrigators, 3. mediation of conflicts between irrigators and 4. education of irrigators. This framework has demonstrated successful management of local water resources during 2001, 2002 and 2003. Particularly during 2001 and 2002, when dry conditions were experienced, the Irrigation Advisory Committee resolved conflicts and ensured that ecosystem functions were not compromised.

Keywords: irrigation, water management, community development, conflict resolution

INTRODUCTION
Across North America, water is increasingly recognized as the precious resource that it is. Governments at all levels are turning their attention to the preservation and enhancement of the quality and quantity of ground and surface water. The relationship between agriculture and water resources has come under increasing scrutiny. For example, in many states and provinces Nutrient Management Legislation has been adopted to help ensure that nutrients do not contaminate water. Agriculture’s use of water is also an important issue. In particular, irrigation is a noted heavy user of water. In the American southwest, for example, agriculture only exists where there are sufficient supplies of water for irrigation. In Canada, parts of Alberta and British Columbia are equally dependent on irrigation. In Ontario, although there is generally sufficient rainfall for agriculture, for certain crops and in certain geographic areas there is a water deficiency (e.g. tobacco or vegetables on sandy soils).
Increasingly, there is recognition of the importance of involving the local community in the process of managing environmental resources (Caldwell et al., 1999). This paper
reviews the establishment of Irrigation Advisory Committees in Southern Ontario as a policy response to the increasing frequency of drought conditions combined with increasing demands for limited water resources. While similar local and participatory strategies have been used in developing countries (Raby, 1991; Stacey, 1999; Samad and Vermillion, 1999; Yercan, 2003), their use in North America is limited. These committees have a number of responsibilities but their key role is one of managing conflict associated with competing demands for water usage.

**CONTEXT**

Irrigated agriculture is extremely important for the production of the world’s food and fiber. Irrigation produces 40% of the world’s food from 18% of the world’s arable land (Postel, 2001). Canadian irrigated agriculture occurs primarily in the west (Alberta 64%, British Columbia 14% and Saskatchewan 9%). Ontario is the fourth province in terms of irrigated area, with 122,000 acres representing 6% of the total irrigated land in Canada (Census 2001).

Irrigation in Ontario is required for the production of those crops of high value that are sensitive to drought stress. These crops include vegetables, fruits, tobacco, sod and ginseng. Only a small portion of the vegetables in Ontario are grown with irrigation (<11%) whereas almost 35% of the fruit crops and 80% of the tobacco crops are irrigated (Clark, 2003). The primary methods of irrigation are by traveling gun, drip (trickle), solid set sprinklers and centre pivot.

Ontario farmers are facing increasing pressure to use irrigation on their crops. These pressures arise from three factors: an increased frequency of low rainfall during the growing season, a demand for consistent quality from the consumer and a demand for consistent quantity and quality from the processor. Irrigation serves as a good risk management tool for high value and quality sensitive crops.

**Water Management Issues Related to Agriculture**

The average annual rainfall in Ontario is 660 mm – 1016 mm. Although this is comparatively abundant, there are some basins and some seasons where water supply is reduced, leading to conflicts amongst water users. Historically, low water or drought situations occur relatively infrequently. From 1998 to 2003, numerous growing seasons have experienced lower than average precipitation and low water levels (Ontario Low Water Response, June 2002, pii).

Water is withdrawn in Ontario for many purposes including domestic use, aggregate extraction, irrigation, industry, livestock watering, recreation etc. When water supplies become more limited the potential for conflict arises between users either within their water use sector or with other sector users. Water use for irrigation is under increasing public scrutiny. Agricultural irrigators are finding the need to demonstrate their stewardship of the water resource and the environment in general.

Both reductions in the availability of water and increases in demands for water can precipitate conflict between users. Summer low flow periods are particularly challenging for irrigators as this represents their highest period of use and the lowest period of flows in Ontario. The potential for low summer rainfall to affect the water supply is increased...
due to the fact that some irrigated basins in Ontario depend heavily on surface water or superficial aquifers for their water supply.

POLICY RESPONSES
Given the importance of water to all people and the limited nature of the resource, there is a responsibility on the part of all people, and their governments, to demonstrate wise management. This is true both for waters shared at the macro level, across international borders, as well as water shared amongst users at a more local or micro level. In Ontario, water is shared with other states and provinces that border the Great Lakes.

Two main mechanisms for management of water use exist in Ontario. The first is a permitting system under the *Ontario Water Resources Act* and the second is a community based, short-term, drought mitigation system through the Ontario Low Water Response Plan. The Ministry of the Environment (MOE) administers and enforces the permitting system which requires that all water users taking more than 50,000 liters of water per day have a permit and adhere to its conditions. The Ministry of Natural Resources (MNR) is the lead for the Low Water Response process, however individual Low Water Response Teams are organized by the local Conservation Authorities. These Conservation Authorities (watershed managers) gather interested stakeholders to discuss water management issues and how, in low water situations, the community members can work together to reduce or better manage the water, given the reduced supply. Members of the Water Response Teams include stakeholders as well as non-voting members from MOE, MNR and the Ontario Ministry of Agriculture and Food (OMAF).

Local Users – What Policy Means on the Ground
Within Ontario, the management of water resources includes a complex and diverse set of initiatives. At a regulatory level, these actions are primarily the responsibility of the provincial government and include the ministries of Environment, Natural Resources and to a lesser extent, Agriculture and Food. Increasingly, however, there is recognition that there is much to be gained by engaging the local community. Collaboration, co-management, and partnerships are all examples of management strategies that, to varying extents, include an important participatory role for the local community.

Why Involve the Local Community?
While the environment is a major concern of the public and policy makers, there is an increasing recognition that traditional regulatory tools are not adequate to ensure the protection of water or to minimize the impact of human activity. Public concern for the environment has motivated a large number of people to take action and to act locally to maintain and enhance water supplies. This commitment to local action and participation in environmental management reflects a belief that there may be better ways of managing our resources and environment, and is consistent with change that is occurring in a broader societal, political and jurisdictional context. The factors driving this change are:

1. **Sustained Funding:** In Canada, provincial and federal funding of environmental stewardship (e.g. resource management and protection) suffered significant setbacks during the 1990’s. During the 1990’s, Ontario was no exception, with cuts to the
environment related ministries (e.g. Natural Resources, Environment and Agriculture) and agencies (e.g. Conservation Authorities) - disproportionately more than other government agencies. Many non-government organizations also faced similar reductions, including a decline in membership, subscriptions and corporate funding.

ii) Problems with Regulation: While regulation is an appropriate response to certain types of environmental issues, there are also limitations. Regulatory policy, at least in the past, has often been developed without community input and support. The result has often been programs and policy that are not supported, nor particularly successful in achieving environmental goals. At the same time, with limited funding there is a reduced ability to make people aware of regulation or to enforce it.

iii) Demands for Public Involvement: Increasingly, society expects to be involved in the development of policy, actions and implementation. Associated with this is a philosophical change regarding the role of local communities in contributing to and controlling their own destiny. This local involvement is likely to contribute to community support and in turn enhanced and more efficient program delivery.

iv) Education and Community Knowledge: Public participation also enhances the development and sharing of information and knowledge among communities and people working there. In large part, this community based knowledge can serve as a surrogate for the "expert" knowledge that was traditionally brought to the community.

v) Local Leadership: Within all communities, there are people who are perceived as leaders who can be instrumental in mobilizing public support and action. Their involvement results in more appropriate and effective actions.

vi) Local Accountability and Appropriateness: For actions to be effective they must be appropriate for a given community. Local leaders encourage a high degree of accountability in terms of the appropriateness, effectiveness and efficiency of a locally based process.

vii) Community Buy-In: Community support for water protection is likely to increase where actions are locally generated in response to community needs.

vii) Importance of Volunteerism: Volunteers provide resources that can be utilized in response to many environmental issues. The challenge is to support their knowledge needs, bring together the right mix of skills and abilities, and ensure that they get the benefits and recognition to continue their work. Provincial and federal support for volunteer actions can include resources to help share information and science, leverage funding, utilizing policy and programs and establishing a global context for local actions.

ix) Effectiveness: A locally based approach has the potential to be highly effective in identifying environmental issues and developing appropriate actions in an efficient and accountable manner.

x) Shifting Community Values: Influenced by "global" attention to environmental problems and the risks to human health and well-being, local people are putting higher value on natural ecosystem sustainability and the amenities that are provided by healthy environments.
PRINCIPLES OF COMMUNITY DEVELOPMENT
Community development provides a useful framework for a local response to environmental issues. While community development concepts have been applied to economic and broader community issues (Bryant, 1997; Bruce, 1997), it has seldom been applied in an environmental or resource management context. This approach encourages people to work together to identify issues and develop a community response by focusing on direct public initiative, participation, and action. It invokes increased local autonomy and enhances local choice and options by focusing on the process of enabling people to collectively achieve goals and influence actions (Lotz, 1987; Douglas, 1987; Bruce, 1997). While in its purest form it happens “spontaneously” from within a community, there is an opportunity for local and provincial staff to assist through the development of programs and funding initiatives, or through facilitating and working with a local community in the development of community development initiatives.
Community development, through participation, education and local knowledge can foster a broader community understanding and identification of environmental issues. Empowerment (local control) of the solutions to the identified issues will generally mean increased potential for success. Collaboration between all stakeholders is required for the solutions to be accepted and for the community as a whole to participate. Collaboration may be difficult to achieve but, if discussions can be elevated beyond individual interests, there is an opportunity for enhanced communication and resolve (Caldwell et al., 1999)

Community Development and the Management of Conflict
These principles of community development may also be helpful if applied to the management of conflict. Modern agricultural practices tend to be increasingly intensive, large scale and, at times, controversial. While there are numerous sources of conflict, this paper focuses on the conflict that can occur related to the management of water. This potentially includes issues related to the allocation, timing of usage, and amount of water used for irrigation purposes.
When conflict occurs there are three general responses that people have. First, some individuals will choose to ignore it. Second, it may quickly escalate out of control or third, people may seek some means to resolve the conflict. The conflict and alternative dispute resolution literature points to the advantages of managing conflict locally and informally versus more formal and expensive strategies (such as the courts). The “alternative” in alternative dispute resolution refers to alternatives to litigation (and a reduced reliance on regulation). Figure 1 (adapted from Caldwell et al., 2004) presents a continuum of conflict resolution.
Local approaches to the management of water resources promise benefits beyond those associated with a purely regulatory approach. In the context of managing surface water for purposes of irrigation, these initiatives promise the following advantages:

- **Local control** - Peer led approaches are likely to be less intimidating with a reasonable chance of acceptance and compliance.
- **Lower cost** – Voluntary action will almost always be less expensive than regulation.
- **Win-win** – The sharing of resources (water) and related benefits is enhanced when all parties have an interest in the process and an opportunity to influence the outcome.
- **Reduced regulation** – The greater the success at managing local water resources, the less need there will be for regulations.
- **Wider compliance** – Community leadership can contribute to community acceptance of shared goals related to water management.
- **Trust** – A well-designed and implemented process will contribute to trust and a greater acceptance of the common good.
- **Maximization of water resources** – Water supplies, for purposes of irrigation, are essential but limited. Local involvement can enhance or maximize the sharing of this resource.
- **Benefits to the environment** – All of the above have the potential to contribute to enhanced management and related improvements to the environment.

*Shortt et al., A participatory approach to water management: Irrigation Advisory Committees in Southern Ontario*
IRRIGATION ADVISORY COMMITTEES

Irrigation Advisory Committees (IACs) have evolved as part of a local response toward achieving self-management of water resources. More specifically, they are a community based mechanism for resolving conflict related to agricultural production and irrigation practices. These committees provide an important alternative to the use of courts and to the perceived heavy handedness of provincial regulations. A similar model is also being used by communities responding to conflicts related to nutrient management (established under Ontario’s Nutrient Management Act) (Caldwell and Ball, 2003). Experiences within both of these contexts offer valuable examples for use by communities in other types of conflicts.

The model used for the IACs is presented in the following flowchart (Figure 2).

![Flowchart](image)

*Figure 2 – Process for community based conflict resolution: Irrigation Advisory Committees*

*Adapted from Caldwell and Ball, 2003*
Each committee is made up of representatives from the various commodity groups in the local farming community (i.e. vegetables, tobacco, etc.). A committee has an executive of a chair, a vice chair, and secretary, with about 10 members. The purpose of the IAC is to operate as a voluntary, peer review body to “educate, coordinate, and informally arbitrate” (Ryder, 2003). The goal of the IAC process is to manage the available water resources among the user (irrigators), without disrupting the natural functions of the streams. When the chair receives a complaint, he/she creates a subcommittee of three members to respond. This usually involves engaging in a type of ‘shuttle diplomacy’, speaking to both parties separately to hear their stories and helping them to look for possible solutions – often through increased knowledge and education or through changes in management practices. On occasion, it may be beneficial to have both parties meet face to face, in which case the sub-committee may become quasi-mediators. Committee members are trained in mediation and water regulations prior to engaging in these roles. Recommendations are made by the subcommittee to the disputants and may also be forwarded to the local Water Response Team. This entire process is informal, voluntary, and legally non-binding. The model has been used successfully by various communities who have adapted it to their specific local context and local organizational structures.

IRRIGATION ADVISORY COMMITTEES IN PRACTICE

In southwestern Ontario, IACs have been organized and implemented in four different watersheds – Big Creek, Whiteman’s Creek, Big Otter, and Catfish Creek, see Figure 3.

Figure 3 – Geographical locations of watersheds with Irrigation Advisory Committees in Southern Ontario

1 Comments concerning the IACs are based on a number of interviews, the review of Committee materials and the experience of the authors.
Norfolk County, in which the Big Creek watershed is situated, was the first to form an IAC, which now acts as an extension of their Low Water Response Plan. Under the umbrella of the Norfolk Federation of Agriculture and in partnership with the local Conservation Authority, local farmers collaborated to address local, low water issues. It was their “belief that, as good stewards of the land, farmers can effectively work together to cooperatively ensure there is enough water for all takers” (NIAC, 2000). To this end, they implemented a pilot IAC project in one watersheds within the county to be used as a framework for implementation within additional watersheds. The focus of this section will be on the Big Creek IAC, its formation and specific activities.

Figure 4 – Big Creek watershed

Big Creek watershed covers 723 km$^2$ and has approximately 800 irrigation water users, thus it is one of the more densely populated irrigation areas in the province. Drought-like conditions in Norfolk in 1998-1999 brought the area to the attention of the MOE and, as discussed earlier, highlighted the need for intensive management of water withdrawals. In this context, the Big Creek IAC was established with the following objectives, to:

- target surface water-takers on the watershed
- train and educate target audience in their responsibility toward and the importance of maintaining the natural function of the stream.
- provide third-party, non-biased mediation and advice to users if unable to settle allocation disputes amongst themselves.
- promote cooperation amongst users on water management and conservation by the establishment of water management groups on North and South Creek as a trial project.

The Big Creek IAC is organized based on the model from Figure 2 and responds to local agriculturally related conflicts. However, the committee is also directly connected to a
group of community liaisons who are representatives of a group of neighbouring farmers (see Figure 5). All irrigators in the basin are divided into small groups surrounding each tributary or section of tributary. Each of these working groups consists of approximately 7-12 irrigators. One person from the working group acts as the contact person or liaison. Each working group has the responsibility to manage the water in their stream section amongst themselves and ensure that the natural function of the stream is not disrupted. Techniques used by the working group include: scheduling their water withdrawals, developing off stream water sources (ponds, wells, etc.), pumping from streams to ponds slowly then irrigating from the pond at a high pumping rate, implementing best management practices, exchanging and implementing local innovative ideas for water sharing and conservation.

Responsibilities

- point of contact
- establishes 3 member panel
- convenes a mediation
- serve on panel
- mediate disputes
- share information with community liaisons
- Receive information from Advisory Committee
- share information with neighbouring farmers
- Take action responding to drought conditions

Figure 5 – Big Creek Irrigation Advisory Committee organizational structure and connections to the community

In the event of a low water situation, the IAC chairperson and secretary are informed by the local Water Response Team (WRT). The secretary informs each IAC member. The IAC members then inform the liaisons for each working group. The liaison informs each member of the working group. Within a very short time period, all irrigators in the watershed are aware of the low water situation (within 24hrs of the initial announcement). Once all users are aware of the low water situation, the liaison may also call a “kitchen table” meeting for the working group to decide on an action plan to maintain flow through their stream section.

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If a farmer in any given sub-watershed has an irrigation supply related issue, they are encouraged to first contact their liaison who then sets in motion a process of local mediation. The liaison reports the complaint to the IAC chairperson who then finds three trained committee members to respond to the call. Within the resolution team, one member must represent the agricultural commodity of the farmer who issued the complaint while the other two members are randomly assigned based upon availability and locale. The mediation team visits both the complainant and the offending farmer, and following discussions, makes its recommendations. From the perspective of the IAC and local farmers, it is in the farmer’s best interest to whenever possible resolve potential conflicts in this manner rather than involving provincial ministries.

The success of the pilot project in Big Creek has led to IACs being initiated in Whiteman’s Creek, Big Otter Creek, and Catfish Creek in 2003. Reflections in the following section are therefore based on the experiences of these various watersheds and their IACs.

**LESSONS LEARNED**

Irrigation Advisory Committees have been received differently within the targeted watersheds. While the general consensus of farmers in Norfolk County perceived the IAC process to be ‘positive, proactive and effective’, some farmers within the Whiteman’s Creek watershed did not view the process favourably but rather referred to it as a necessary action to ‘keep bureaucracy off our backs’. The IAC Chairperson of the Whiteman’s watershed qualified the attitude of Brant County farmers toward the IAC process as laissez-faire, indicating a need of greater solidarity amongst farmers for the IAC concept to be viable.

With minimal compensation for participation, the farm community within all watersheds targeted by this project viewed the process to be rather time consuming but, when traded off with less government involvement in the regulation of their farming practices, worthy of their time commitment. The past chair of the Norfolk IAC, indicated favourable farmer turnouts to IAC meetings and a general feeling of satisfaction in 80% of mediations that had taken place over the last three years. Further to this, the Norfolk IAC has taken the initiative to create an evaluative questionnaire that is distributed to individuals involved in a mediation so that procedural feedback can be ascertained.

The informal, farmer-to-farmer cooperative approach employed within the IAC model was received most favourably within all sub-watersheds reviewed. Varying degrees of hostility/animosity toward government regulatory practices in agriculture were presented by farmers within each of the watersheds reviewed, all agreeing that management strategies eliminating or diminishing governmental involvement in such matters are favoured. The relatively short life span of the IAC project made it difficult to ascertain substantive results or long-term measures of success. The sub-watersheds within Whiteman’s Creek, Big Otter and Catfish Creek have yet to engage in mediation and therefore could only provide preliminary notions or commentary about the success of the IAC in their area.

IAC members within each watershed attested to the validity of mediation training provided. Although viewed by some participants as a necessary formality, it was in
general seen as integral in building the capacity of mediators to effectively arbitrate and a prerequisite to show due diligence. Participants in general felt that a two-day time commitment for mediator training was appropriate and feasible, provided it was not scheduled during peak agricultural seasons.

Concern was expressed from both farmers and ministry representatives alike concerning the lack of long-term funding to support the IAC initiative. The IACs in each watershed function year to year on shoe-string budgets, in some cases with IAC members contributing additional time toward creating applications for additional governmental grant funding. The lack of committed, long-term, governmental funding was perceived in some cases to be a disincentive for increased farmer participation. Further to this, without proper funding to compensate committee participants, some farmers felt that an expectation for farmers to ‘do it for free’ would be received negatively within communities, reflecting a general lack of respect for their limited time.

Ministerial perceptions of the IAC process viewed the process as one of ‘local empowerment’ intended to build local capacity, notions of stewardship and tools for addressing irrigation issues locally. Although the Low Water Response process was deemed by farmers and ministry employees alike to be reactive instead of proactive toward managing local water resources, in theory the IACs provide an opportunity for both a proactive and when needed a reactive mechanism. The IAC process tested in Norfolk County was designed with a goal of replication in mind. Since the inception of the IAC concept in 1999, the process has been repeated in three additional watersheds within southern Ontario, but has not been received by the farming community with the same level of commitment or enthusiasm as the pilot project.

Five criteria have been identified as keys to the success of the Norfolk IAC pilot project. Some of the success criteria identified appear to be context or location specific, inherent to the local area. There are however, some criteria that provide insight into how the replication of the IAC concept can be improved.

1) **Process driven by water crisis in Norfolk**
   The need for a local water management strategy in Norfolk arose in the aftermath of a decision made by the Ministry of Environment during a period of drought to only issue water permits during the agricultural off-season. Local farmers voiced concern to the Big Creek Water Steering Strategy Committee who decreed the need for a ‘made in Norfolk’ solution to remedy this issue. With the livelihoods of their farms directly threatened, farmers in Norfolk had a vested interest in creating a strategy to better manage local water supplies and embraced the opportunity for participation in the process.

2) **Strong leadership from the farm community**
   The strong leadership exhibited by the farming community in Norfolk was an asset in the creation of the IAC concept and its implementation. A core group of farmers within the Big Creek watershed were instrumental in designing the conceptual framework of the IAC process, outlining methods, deliverables and soliciting additional support and participation from the surrounding farming community. It has been suggested that increased leadership and farmer commitment in the Catfish, Big Otter and Whiteman’s Creek watersheds is necessary for the full potential of the IAC process to be realized.

3) **Farmer ownership of IAC concept**

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As previously mentioned, farmers in the Big Creek watershed have maintained an integral role in all stages of the IAC process, from creation to implementation. This level of involvement over the past three years enabled farmers within Norfolk County to develop a sense of ownership of the IAC concept and thus a greater personal stake in overseeing the success of its mandate. With a framework and mandate already established, farmers in Elgin, Oxford and Brant counties were not afforded the same opportunity to develop a sense of ownership of the IAC concept, correlating into less of a commitment by the farm community in these areas.

4) Dense farming population drawing from a common water source
The unique geographical organization of landowners within the Big Creek watershed also became an asset in the establishment of the IAC process. In comparison to the Catfish, Big Otter and Whiteman’s Creek watersheds, Big Creek has a large number of closely spaced farmers, many of whom are drawing water from common sources for irrigation. When these water sources become compromised or stressed, farmers in this area feel the effect more acutely than farmers in the more widely distributed Catfish, Big Otter and Whiteman’s watersheds. The degree of shared resources in Big Creek made the mitigation of irrigation issues through the creation of an IAC imperative.

5) Established trust between Norfolk farmers, Conservation Authority and a greater presence of Federation of Agriculture
From creation to fruition, both the Norfolk Federation of Agriculture (NFA) and the Long Point Conservation Authority have maintained integral supporting roles in the IAC process. Acting in an advisory role to Big Creek farmers, both agencies aided in communicating the IAC concept to local farmers while also helping the Big Creek IAC to get training and to secure funding to carry out their mandate. Favorable relations between Norfolk farmers and these two agencies facilitated efficient and effective working relationships, which were particularly important in the developmental phases of the IAC project. Research suggests that a greater level of involvement from the Oxford, Elgin and Brant Federations of Agriculture could provide possible avenues to achieve greater success of the Irrigation Advisory Committees in years to come.

RECOMMENDATIONS
Several recommendations have emerged from the use of Irrigation Advisory Committees by agricultural communities in the self-management of water resources and associated conflicts. These include the need to:
1. Secure long-term sources of funding for the continuation of IACs
2. Work on building greater trust between Conservation Authorities, government ministries, local farm organizations and local farmers
3. Continue to ensure the IAC process is guided by valid information, opportunities for collaboration between all stakeholders, and open lines of communication
4. Seek greater participation and integration of local farm organizations (i.e. Ontario Federation of Agriculture) in the Big Otter, Catfish Creek and Whiteman’s Creek watersheds. In this context they would promote greater visibility of the Federation of Agriculture’s role in the process, especially in developmental phases.

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Experience has shown that, while the IAC model may not resolve all conflicts, Irrigation Advisory Committees offer an effective participatory approach to water management. IACs have provided an alternative, community based response to policies and regulation. As such this serves as an approach to be considered by other communities experiencing similar community tensions and conflicts surrounding water resources. In time, it warrants further evaluation for possible broader application.

REFERENCES


NIAC, Norfolk Irrigation Advisory Committee, (2000).


Ryder, P., (2003) Interview Comments from the Chair of the Norfolk Irrigation Advisory Committee, Delhi, Canada.
