

**The Horinko Group**  
***Water Managers and Decision-Makers: Searching for Synergy***  
**Water Salon Series, Part I**  
**Summary and Synthesis**  
**June 15, 2010**  
**Washington, DC**

**PURPOSE AND OVERVIEW**

Marianne L. Horinko, President of The Horinko Group (THG) and THG’s Water Division launched its *Water Salon* series to provide a venue for reflective and non-attribution discussion among executives and engaged practitioners about critical water issues.

Providing a context for the discussion, Dr. Gerald E. Galloway, Glenn L. Martin Institute Professor of Engineers at the University of Maryland and a retired U.S. Army Corps of Engineers general, presented 12 timely issues facing water professionals, taken from a chapter he authored entitled “Making the Transition: Moving Water Resources Planning and Management into the Twenty-first Century.”<sup>1</sup>

Dr. Galloway then highlighted the cross-cutting issue of the “Dilemma of the Water Box,” a concept he contributed to in “Getting Out of the Box – Linking Water Decisions for Sustainable Development,” from the United Nations document, *Water in a Changing World*, released March 2009 at the 5<sup>th</sup> World Water Forum in Istanbul. This dilemma describes water professionals as often times being “inside the box,” disconnected from decision-makers (e.g., government leaders, the private sector, and civic society/general public), who are outside the box and yet who make or influence decisions regarding the allocation of human and financial resources necessary to meet water challenges.

Sixteen participants from the federal government and non-governmental organizations participated in the discussion (refer to *Attachment I: Final Attendee List*). THG purposely kept the salon small with the intention of creating an intimate discussion where critical analysis and collaboration could be fostered. In his introduction of Gerry Galloway, Bob Pietrowsky, Director of the U.S. Army Corps of Engineers Institute for Water Resources, noted that water is a shared responsibility that necessitates collaboration. He welcomed the opportunity to focus on “big picture” issues through the *Water Salon*.

**CONTEXT**

Dr. Galloway’s thesis was that perspectives and policies on water resources development and management have evolved over time, but we have not always consciously recognized this or how and why we developed our water resources planning and management policies and approaches. We are at a crossroads – presenting the opportunity to think

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<sup>1</sup> Russell, Clifford S. and Duane D. Bauman, eds. *The Evolution of Water Resource Planning and Decision Making*. Alexandria, VA: the U.S. Army Corps of Engineers Institute for Water Resources, 2009, pp. 258-284.

more wisely about what needs to be accomplished and how to implement policy in a manner that ensures sustainable water and other natural resources. As we have gained knowledge over time, there has been an evolution in thinking and understanding about water management. For example:

- We no longer view the environment as something that can be controlled or ignored but rather as something that is dynamic and that must be taken into account in all of our decisions.
- Additional focus is placed on mitigation of adverse effects (e.g., pollutants or environmental destruction) in the face of environmental development or restoration.
- The center of gravity for political and public interest has shifted from the local level to the federal level, then to cost-shared arrangements, and now must focus on defining and maintaining the federal role and interest in water management as engineering, hydrologic and ecological expertise has grown at large.
- Criteria for planning and decision-making about investments in water resources have shifted from a value on the public good to a quantitatively based cost-benefit analysis of measurable national economic benefits, then to a systems view that appreciates that economic, environmental quality, and public safety are all interrelated and important decision criteria.
- Technological advances have made information management, remote sensing, and new materials development more possible, facile, and available.

At the juncture of these new developments, the breadth, complexity, and interconnectedness of water issues bespeak the need for new, more innovative, and more collaborative approaches to address critical water issues. We remain handicapped, however, by unclear or lacking definitions, inconsistent or absent guidance, unclear or divergent roles and responsibilities, fundamental geographic differences that make national policies difficult to formulate, and conflicting policies.

## **ISSUES**

Dr. Galloway invited the group to consider the following current water issues, with group discussion illustrated. The discussion provided some insights about both the nature of the problems and some strategies to address them. Some highlights are encapsulated below:

1. Implementing Adaptive Management

Adaptive management enables us to stop, evaluate, and reflect on our actions, so as to change our plans to better meet objectives. Planning horizons tend to be short-term, but there are decisions that require long-term perspectives. Plans must be easily adaptable to account for dynamic conditions and incorporate long-term needs. Adaptive management can be an organizing principle, but some view the term as vague and not used consistently. In a legal framework, which guides much water resources development, this perceived lack of clarity and definition is a handicap. Congress also tends not to embrace this approach, wanting more certainty when considering programming and budgeting processes. However, in

order to effectively assess a situation, we must factor in baseline measurements and fundamental uncertainties/unknowns.

2. Broadening benefit-cost analysis  
Quantitative formulae dominate water resources investment decision-making. Economically based cost-benefit analyses factor out both qualitative variables and innovative approaches. Therefore, broadening benefit-cost analysis will be crucial. Often times, the desire to monetize ecological and public safety benefits is thwarted by the difficulty of doing so.
3. Understanding ecological restoration  
Fully understanding ecological restoration can be viewed as such an involved, long-term, and costly process that we become overwhelmed and avoid thoroughly exploring it at the necessary depths. Furthermore, we are not always clear about what we want (e.g., to what condition should we restore things when conditions are dynamic and interrelated?).
4. Taking climate change into account  
Concern and perceived certainty for climate change impacts are increasing. However, new guidance has yet to be issued. We cannot come to grips with the complexity; partly because we do not understand the risks we face or do not want to accept them.
5. Defining the role of the public  
We appreciate that a matrix of stakeholders should be involved in water resources planning and management, but we often find it difficult to convene them or to manage them efficiently.
6. Extending planning objectives and measuring results  
The focus is more on developing water resources projects with local project sponsorship than on measuring the impacts of these projects. Congress (especially appropriators) has more interest in sponsoring projects than in conducting follow-up studies to assess results.
7. Addressing basin and watershed planning  
We tend to sub-optimize the whole (the river system or basin) when we do not account for all variables (e.g., sediment transport). We must identify multiple variables and stakeholders and how they are connected. Many believe that a systems approach to water management holds the most potential, while its practical application and understanding is evolving.

When we enlarge our scale, (e.g., from a project to a basin level), we are not always clear about who owns the context. At the regional level, some councils of governors and river basin commissions arise to fill the breach. Having clearly defined boundaries helps, as the International Joint Commission on the Great Lakes has revealed.

8. Integrating groundwater into planning and management  
Effective integration can be difficult to operationalize, making it a challenge to instruct people to integrate planning and management. Some believe that integration refers to specific and localized needs and efforts, while others believe

it is an all-encompassing systems-oriented concept that focuses on water quality/quantity, upstream/downstream impacts, surface and groundwater, etc. EPA's work along the Delaware River Basin provides an example where the larger denotation of integration is being implemented with multiple stakeholders engaged to achieve a number of related objectives through integrated activities for economic, ecological, and social benefits.

9. Reducing flood damages

The National Flood Insurance Program (NFIP) sends mixed signals about what is important: preventing flood damages by moving people and property out of a high-risk floodplain or tolerating high flood damages because people are allowed (encouraged?) to rebuild in high-risk flood zones.

10. Unjumbling federal water policy, legislation, and coordination

Paradigms affect how we have developed policies and the actions we have taken in water resources planning, development, and management. Dealing with true complexity is difficult and frustrating. Decision-makers often ignore or simplify the complexity because it is too complicated or difficult to address. What tolerance do we have to allow government to fail? Not much. Changing approaches and policies is made even more difficult because it implies that past decisions (i.e., investments) were wrong or wasted. We tout "best practices," but how do we know if they are true value if we do not engage in baseline, mid-range, and end-state monitoring?

11. Wisely replacing aging infrastructure

The short-term budget focus and attraction of new infrastructure over replacement or rehabilitation of current infrastructure (general construction budget vs operations and maintenance budget) may handicap attention to existing infrastructure. Without a systems view, we tend to consider and fund individual projects rather than a portfolio of infrastructure for a given watershed or river system.

12. Acknowledging the private sector

The role of the private sector has been factored out of public infrastructure funding, although interest in public-private partnerships and collaborations is increasing.

## **IMPLICATIONS**

These issues have some implications for setting future directions in water management in terms of:

- Addressing organizational structure and the policy void
- Assessing the state of water resources in the nation
- Working in an interdisciplinary and collaborative manner
- Breaking through existing silos (functional "stovepipes")

- Adequately supporting water resources research and conducting *ex post facto* research – particularly in water availability, water use, ecological restoration, and environmental quality
- Exploring and applying new paradigms for stakeholder involvement

## **ACCOUNTING FOR THE WATER BOX DILEMMA**

The issues described above are confronting water users, professionals, and practitioners who live and work inside the water box. Available funds, regulations, and public involvement affect our ability to tackle these problems. Bottom-up efforts allow the issues to surface, inclining those inside the Water Box to address them. However, those outside the box may not share the values, paradigm, definitions, understanding, approaches, or priorities of those inside the box. As the general understanding of those inside the box grows or shifts, the same is not necessarily true for those outside the Water Box. Too often decision-makers are not adequately informed about how and why water issues are relevant to their lives and to broader social, political and economic decisions. This is partly due to the fact that we fail to analyze and catalog things at a macro level so as to demonstrate the correlation between water use and investment (or under-investment) and long-term effects and impacts. Macro analyses would show how water is related to social and health variables, and thus how investments in water resources infrastructure and solutions could lower other social and economic costs faced by city planners, mayors, governors, and other community leaders. Poor health caused by insufficient water supply or poor water quality consumes a high proportion of financial resources for cities, states, and the federal government.

Without this understanding, we will make shortsighted or even foolish decisions. Furthermore, decision-makers must possess the courage to make the tough decisions. Clarifying the relationships between variables and causes/effects may help decision-makers evaluate the wisdom of their policies and decisions. Clearly stating the intent of a policy will promote a general understanding among citizens at all levels and positions, and thus might influence behavior in a constructive way. New social media technologies now exist and have the potential to help in planning and decision-making by educating, informing, and achieving consensus about what to do, which is particularly important at the local level.

There are real ideological, cultural, and geographic differences that shape people's worldviews (paradigms) and thus our water policies. Many are skeptical of a national water policy to guide future water resources investments and decisions. Some believe that water policy means specific control and guidance; others view it as a generalized vision expressed through principles and guidelines that could provide a framework or set of goals for future actions and decisions. Failure to move beyond different viewpoints or to understand and appreciate them makes it difficult to gain consensus about such trying issues. The use of new models, visualization technologies, and consensus-building processes will be necessary in order to move ahead. Building a greater degree of trust within and across civil society, business, political, and professional water sectors (those outside and inside the Water Box) will be essential.

## **DECONSTRUCTION OF ISSUES TO REVEAL COMMON THEMES**

The following themes or common threads cut across all 12 cited water resources issues:

1. Equity  
Water is not viewed as a human right to be equitably distributed. We need to make decisions with fairness and equity in mind.
2. Vision for Water Use and Management  
Visions about future water resource management must account for place-based differences in geography, ideology, culture, and paradigm (world view). Regional and ideological differences define water resources management in practice and need to be taken into account in setting a vision and supporting policy.
3. Collaboration  
There are many good examples of collaboration, but they are not widely shared or applied or are difficult to transfer or import because of the geographic, cultural, and ideological diversity that exists throughout the nation. We should avail new processes and technologies to promote collaboration.
4. The Connection between People and Water  
Were people to appreciate the criticality of natural resources, including water, they might better appreciate the implication of their decisions regarding water resources development and management. We need to build a more conscious (and conscientious) relationship between people and water.
5. Complexity  
Management of water resources is growing in complexity but the tools and concepts utilized by decision makers outside the Water Box may well be insufficient to address them. This is coupled with a human disposition to simplify or avoid complexity because it is “too hard to manage.” The project vs. river system/basin/watershed planning focus is an example. Disconnects between groundwater and surface water decisions and across drinking water, stormwater, and wastewater management emanate when a systems view is not utilized. We need further develop and enhance the tools and process we use to help us think, plan, implement, and evaluate.
6. Silos or Stovepipes  
Functional silos, especially those that are politically entrenched, provide substantial barriers to change and improvement. We need to transcend beyond these boundaries.
7. Incentives and Disincentives  
Incentives are not clear or clearly aligned to reflect a national vision (policy) about water management. Furthermore, there are many disincentives that befuddle or stymie unified efforts for responsible water management for sustainable water and related resources. We need to consider incentives and disincentives in and across the water policies we develop.
8. Grounding Policies in Theory and Practice  
Many policies do not measure the depth of assumptions so as to become

grounded in well-conceived and well-deliberated theory and practice. For instance, standards for environmental restoration are not clearly defined, i.e., restore to what state? Gleaning clear standards is confounded by the facts that natural resources are dynamic and not static phenomena, while investment decisions are grounded in quantitative economic models that tend to factor out useful qualitative information for well-rounded decisions. Decision-making processes and variables need to be more robust.

9. Monitoring and Adaptive Management

The lack of information about current states and condition of resources is a veritable handicap. This is due to the tendency to not conceptualize problems and objectives broadly within a systems context to capture all relevant variables and stakeholders and their interrelationships, a lack of investment in monitoring as a way of doing business, the lack of attention to adaptive management practices, and a short-term time horizon tied to annual budgets and the next election. We need to validate monitoring and adaptive management as the standard for conducting business.

10. Public Involvement

Investment decisions may not fully engage the public, which exacerbates the distance between those inside and outside the Water Box. We need to move beyond formalized public involvement processes early and often in the planning and project development phases.

11. Clarity of Roles and Responsibilities

Roles and responsibilities are not clearly defined or have not fully evolved to address contemporary 21<sup>st</sup> Century water management issues. The evolving roles of the private sector and of the federal government in the face of increasing water expertise at local and regional levels may be neglected. The lack of role clarity stymies efforts to engage the private sector and local water entities and stakeholders. Perhaps it is time to clarify roles and responsibilities in a consensus-based manner. This presents an opportunity to promote discussion about water resources.

12. Integrated Water Resources Management (IWRM)

There are good examples of effective and integrated water resources planning and management but they are not necessarily applied because of the predilection to “do things as we’ve always done them” or because of unclear or inconsistent definitions about “a systems approach,” “a watershed approach,” or “integrated water resources management.” Focusing on operational definitions of IWRM provides another opportunity to discuss water resources.

## PROBLEM STATEMENTS

Reflection upon the common themes that emerged from the discussion highlighted barriers to change and progress. In response to Dr. Galloway's question, "What barriers exist to each of the 12 issue areas?" The group began to examine strategies to overcome the barriers, although they ran out of time to complete the brainstorming for each issue.

1. *There are disincentives to working for the common good.*
  - a. Recognize how to be adaptive given changing conditions.
  - b. Scour the Code of Federal Regulations (CFR) and the laws that engage state and local government to make wise decisions and help them make wiser decisions.
  - c. Get beyond the federal dollar as the only source of funding. Encourage the private sector to step up to the plate to meet federal goals, and publicize and celebrate those who do so.
  - d. Look at other incentive structures to encourage better local land decisions.
  - e. Make earmark reform.
  - f. Look within and beyond existing programs via a gap analysis.
  - g. Look at how federal programs hold state and local governments back from being innovative. Note that local and state officials may need some "cover" to take more courageous and controversial decisions.
  - h. Shape local planning decisions in ways that provide better and more aligned policy. Note that we must assess the risk tolerance of state and local officials.
  - i. Encourage a longer planning horizon so that the interest of decision-makers does not default solely to raising tax revenues in the short-term.
  - j. Get local governments to think about water resources differently (i.e., recognize the greater role they have in the implications of their investments in land use and public infrastructure).
  - k. Look at incentives for local and public officials to make responsible decisions.
  - l. Look for opportunities to align federal programs.
  - m. Highlight that local decisions bear consequences and thus accountability.
2. *There are differences in perceived benefits and uses of the water resource.*
  - a. Find common perceived benefits while saving the harder ones for later.
  - b. Find the balance between human and economic uses and environmental/ecological benefits.
  - c. Educate members of Congress.
  - d. Identify commonly perceived benefits and build out from a small success that is commonly shared.
  - e. Prioritize uses for water if possible, noting the values-based differences that may make consensus about priorities irreconcilable.
3. *Visions have a place-specific nature defined by geography, location, which makes achieving consensus about a vision difficult.*
  - a. Recognize this and capitalize on it.
  - b. Define a federal role in balancing the differences.
  - c. Look at examples from power and energy utilities (e.g., about how rate differences are dealt with, how rebates are issued).

- d. Engage place-based groups in educating and informing.
4. *Public policies may disincentivize our intentions (and thus our ability to develop a common vision).*
    - a. Recognize that there is a hierarchy of needs based on socioeconomic status.
    - b. Get rid of policies that provide disincentives or that confuse the desired direction.
    - c. Revisit the intent of policies and reorient those that may have lost their way.
    - d. Consider how the intent of policies is tied to political will and courage.
    - e. Identify incentives and disincentives for policies and highlight inappropriate incentives that actually become disincentives.
    - f. Look for sources of funding beyond federal dollars; encourage the private sector to step up to the plate and celebrate those who do.
    - g. Look at the incentive structure that encourages smart local land use decisions.
    - h. Identify and publicize inappropriate incentives.
    - i. Perform a gap analysis between the intent of programs and the results they achieve.
  5. *There is an unclear understanding of integrated water resources management (IWRM).*
    - a. Promulgate an accepted definition to breed common understanding.
    - b. Promote common understanding across federal officials.
    - c. Promote education.
  6. *There is a balkanization of water management and water managers.*
    - a. Encourage the integration of water management for drinking water, wastewater, and stormwater at the local level.
    - b. Encourage greater coordination/collaboration/conflict resolution across agencies, entities, and levels.
    - c. Adopt 2-3 agencies and work on common policies at both state and federal levels.
    - d. Identify specific shared interests and objectives.
    - e. Consider co-locating functions in a single agency both at federal and state levels.
    - f. Promote interdisciplinary teams, building on successful models that exist.
    - g. Align policy across federal programs and organizations and across government levels.
  7. *Political and jurisdictional boundaries get in the way.*
    - a. Optimize by economics (“econosheds” or “ecosheds”). Note that there are differences not delineated by watersheds – where the concept of a watershed may not apply well (e.g., the Gulf of Mexico).
    - b. Use regional entities to transcend local politics.
  8. *Lack of political will and political courage. Elected representatives are more concerned about winning the next election than about exercising their moral responsibility.*

- a. Create political cover through transparency, outreach, and engagement of more stakeholders.
  - b. Set up a “BRAC”-type situation: all or nothing for water decisions.
  - c. Show true costs of doing business, of decisions.
  - d. Celebrate examples of political courage.
  - e. User river groups to promote understanding and a larger view.
  - f. Influence the 90% majority.
  - g. Look for champions at all levels (both public and private) who desire a healthy watershed.
  - h. Identify and cultivate champions for desired behavior/outcomes.
9. *Ideological differences among groups create polarized views.*
- a. Move the discussion from issues to values.
  - b. Have people identify their shared values. Note that it takes time to do this and thus people do not want to spend the necessary time required.
  - c. Put the different groups in the same room.
  - d. Build understanding of Integrated Water Resources Management (IWRM) and how diverse parties do and can contribute to it.
10. *Lack of funds and directed resources.*
- a. Seek innovative mechanisms to generate resources.
  - b. Promote joining resources through collaboration.
  - c. Better direct the resources.
11. *Congress is not organized to promote more effective water planning and management.*
- a. Promote constituent-based action because Congressmen listen to their constituents.
  - b. Educate Congressional staff.
12. *There is a failure to prioritize the importance of water.*
- a. Educate...educate...educate.
  - b. Have a full accounting of the costs of water services (e.g., municipal, ecological) so that we know what they cost and thus their value.
  - c. Communicate vs. brief.
  - d. Do more storytelling to bring the water story (the relevance of water) to the mainstream.
  - e. Know your audience and find ways to appeal to each audience.
  - f. Link important elements (e.g., water-energy-food), to show their interrelatedness.
13. *Lack of clarity about who is responsible for what.*
14. *Differences between national and local water policies.*
15. *Fund disasters over long-term planning.*
16. *“Wait until it breaks to fix it” mentality*
17. *Ag-Urban interface is not integrated (e.g., point and non-point source pollution).*

## COMMON APPROACHES TO COMMON BARRIERS

Based on the common themes and problem statements the group generated, there are open-ended questions with some possible solution strategies inferred from the discussion that suggest a path forward:

- 1. *In what ways might we promote civic engagement and active outreach and education?*** Fully engage local and regional entities that have solved water problems. They have the expertise, experience, and role to engage in education and outreach efforts. Avail new processes (e.g., Shared Vision Planning) and technologies (e.g., social media) to communicate, educate/inform, and breed understanding and consensus. Engage the public, non-profit, and private sectors more fully and more collaboratively. Build on success examples, (e.g., the various groups working on Great Lakes issues, the Western States Federal Agencies Support Team). Collaboration across levels of government becomes germane. Find conveners and opportunities to bring stakeholders together. Include educational outreach to K-12 and higher education levels. There is a need to foster a sense of place that not only enhances water awareness but also creates a emotional connection between people and their water resources to move us from being water users to being water stewards.
- 2. *In what ways might we conduct comprehensive policy analysis to incentivize desired behaviors and outputs/outcomes?*** Identify disconnects, contradictions, and voids in water resources policies and examine the intention and incentives underlying these policies. Look at the Stop Smoking campaign as an example. Legitimizing trial and error learning might help as well.
- 3. *In what ways might we foster data/information-based decision-making?*** Promote better understanding based on monitoring and data about the value and importance of water in all aspects of people's lives. Arming decision-makers with facts, figures, assessments, trends, and implications can facilitate their responsible decision-making. People who understand and value a resource are more likely to protect it and to manage it wisely for the long term. Research and development, monitoring, and adaptive management support this aim. Ground activities and results visually in maps and interactive visual displays. Promote commitment and collaborative processes over command and control arrangements. Another way of presenting adaptive management programmatically is to use the term "stewardship," rather than "ecological restoration," which is too often reactionary and expressed as individual local place-based projects, rather than process-based, with no long-term operational mechanism to effectively steward the resource. Stewardship implies an ongoing long-term custodial relationship that fosters an actionable plan and then sets out to work the plan.
- 4. *In what ways might we encourage political courage in water resources decisions for the long-term good?*** Data/information that support the urgency of plans and decisions, checks and balances, the value/cost of water in multiple aspects of people's lives and work would help. Inform and

highlight risks and consequences of decisions. Use systems models to illustrate multiple and balanced benefits emanating from decisions. Seek consensus from multiple stakeholders and public input.

- 5. *In what ways might we further proactive vs. reactive decision making regarding water resources planning, development, and management?*** Growing understanding about risks and uncertainties and the long-term consequences of decisions should help in this regard. Reward the behavior we desire. Promote systems thinking and use of systems models.
- 6. *In what ways might we build trust among water resources stakeholders, across jurisdictions, and across government levels?*** Improving the ability to talk candidly and openly about water issues/problems would contribute to trust building. Reducing bureaucratic levels and processes that can get in the way of timely decisions might help as well. Honor differences but seek ways to work beyond them for a greater good.

## ATTACHMENT I: FINAL ATTENDEE LIST

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