

IPENZ ENGINEERING UPDATE August 2009



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- Bus rapid transit systems : a Comparative assessment.

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Management/Leadership/Strategic Planning/Recruitment/Training and Development/Project Management/Corporate Responsibility

√IPENZ 27/01 Design considerations for a 21st century ground transportation system based on value-capture financing.

Stull, M. Transportation Planning & Technology, Volume 31 Issue 3 (June 2008) Pages 249-275.

There appears to be a discrepancy between the studies that have shown that transportation systems stimulate economic growth and raise property values and others which have suggested that there is only a marginal economic impact resulting from newly constructed urban rail systems. It may be that a transportation system needs to take a quantum leap over the current network in order to produce more than a marginal economic effect. Accessibility and ridership are influenced by capacity and load factor which can be impacted by fare structure, system design and technology choice. Therefore electromagnetic propulsion with a linear motor is recommended for its value-capture potential.

√IPENZ 27/02 The threat of global gridlock.

Stalk, G. Harvard Business Review, Volume 87 Issue 7/8 (July/August 2009) Pages 126-129.

The article focuses on the transportation infrastructure that is being challenged by the needs of rapid-response supply chains. The cost and time trade-offs that can be adjusted in planning a company's business logistics for shipping products by truck, by sea, by air, and by train are discussed. Statistics are given that indicate a high potential for transportation congestion and bottlenecks in freight traffic, cargo shipping, U.S. highway congestion, and airport capacity. The author mentions that there are opportunities in the transportation network that can improve business logistics, reduce costs, and create a competitive advantage.

√IPENZ 27/03 Delivering innovation in hospital construction: Contracts and collaboration in the UK's private finance initiative hospitals program.

Barlow, J. and Köberle-Gaiser, M. California Management Review, Volume 51 Issue 2 (Winter 2009) Pages 126-143.

√IPENZ 27/04 London 2012: a New approach to CDM coordination.

Proceedings of the Institution of Civil Engineers : Civil Engineering, Volume 162 Issue CE2 (May 2009) Pages 76–86.

A 'CDM coordinator' needs to be appointed on most commercial construction work in the UK to coordinate health-and-safety aspects of design work under the Construction (Design and Management) regulations 2007. However, long-term regeneration of 2.5 km² of Olympic Park, east London – which for 6 weeks will also be used for the London 2012 games – was considered too big for a single appointment, with up to 9000 people working on 38 projects. The Olympic Delivery Authority thus decided to use CDM coordination services provided through its multiple design-and-build contractors, which also made significant savings in fees. A unique 'CDM integrator' was then appointed to manage this large and diverse group, resulting in a uniformly high standard of service and a consistent approach. Reportable accidents in the first year of construction are only around 7% of industry average.

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http://www.ice.org.uk/services/services_journals.asp

√IPENZ 27/05 **A public-sector success (Designer W.S.Atkins survives the economic storm using core skills).** ENR : Engineering News Record (27 July 2009) Pages 20-23

√IPENZ 27/06 **How Gen Y & Boomers will reshape your agenda.**

Hewlett, S et al. Harvard Business Review, Volume 87 Issue 7/8 (July/August 2009) Pages 71-76. When it comes to workplace preferences, Generation Y workers closely resemble Baby Boomers. Because these two huge cohorts now coexist in the workforce, their shared values will hold sway in the companies that hire them. The authors, from the Center for Work-Life Policy, conducted two large-scale surveys that reveal those values. Gen Ys and Boomers are eager to contribute to positive social change, and they seek out workplaces where they can do that. They expect flexibility and the option to work remotely, but they also want to connect deeply with colleagues. They believe in employer loyalty but desire to embark on learning odysseys. Innovative firms are responding by crafting reward packages that benefit both generations of workers – and their employers.

√IPENZ 27/07 **Governing information technology risk.**

Parent, M and Reich, B. California Management Review, Volume 51 Issue 3 (Spring 2009) Pages 134-152.

Dependence on information technology (IT) can lead to business risks related to security and resultant losses and negative effects on shareholders. This article looks at how this risk can be managed through the identification of risk classes, the creation of evaluation criteria and the design of management strategies.

√IPENZ 27/08 **Does a technology-driven organization's culture influence the trust employees have in their managers?**

Alston, F and Tippet, D. Engineering Management Journal, Volume 21 Issue 2 (June 2009) Pages 3-10.



√IPENZ 27/09 **How do disaster characteristics influence risk perception?**

Ming-Chou, H. et al. Risk Analysis: An International Journal, Volume 28 Issue 3 (June 2008) Pages 635-643.

The perception of risk can be affected by the type of disaster, such as floods or landslides, and characteristics of victims, such as gender and previous experience of disasters. This article reports on the National Risk Perception Survey (NRPS) carried out in Taiwan in 2004, which was a year when many towns experienced floods and landslides that caused fatalities and major economic losses.

√IPENZ 27/10 **Can the pilot BOT Project provide a template for future projects? A case study of the Chengdu No. 6 Water Plant B Project.**

Chen, C. International Journal of Project Management, Volume 27 Issue 6 (August 2009) Pages 573-583.

√IPENZ 27/11 **Entering an ecological age : the Engineer's role.**

Head, P. Proceedings of the Institution of Civil Engineers : Civil Engineering, Volume 162 Issue CE2 (May 2009) Pages 70-75.

√IPENZ 27/12 Connecting up strategy: Are senior strategy directors a missing link?

Angwin, D. et al. California Management Review, Volume 51 Issue 3 (Spring 2009) Pages 74-94.

√IPENZ 27/13 Leadership in a (permanent) crisis.

Heifetz, R. et al. Harvard Business Review, Vol. 87 Issue 7/8 (July/August 2009) Pages 62-69.

The current economic crisis is not just another rough spell. Today's mix of urgency, high stakes, and uncertainty will continue even after the recession ends. The immediate crisis – which we will get through with policy makers' expert technical adjustments – sets the stage for a sustained, or even permanent, crisis, a relentless series of challenges no one has encountered before. Instead of hunkering down and relying on their familiar expertise to deal with the sustained crisis, people in positions of authority – whether they are CEOs or managers heading up a company initiative – must practice what the authors call adaptive leadership. They must, of course, tackle the underlying causes of the crisis, but they must also simultaneously make the changes that will allow their organizations to thrive in turbulent environments. Adaptive leadership is an improvisational and experimental art, requiring some new practices. Like Julie Gilbert, who overcame internal resistance to reorient Best Buy toward female purchasers, adaptive leaders get things done to meet today's challenges and then modify those things to thrive in tomorrow's world. They also embrace disequilibrium, using turbulence as an opportunity to build crucial new capacities, as Paul Levy did to rescue Beth Israel Deaconess Medical Center from a profound financial crisis. Finally, adaptive leaders, such as Egon Zehnder, the founder of an executive search firm, draw out the leadership skills that reside deep in the organization, recognizing the interdependence of all employees and mobilizing everyone to generate solutions.

**IPENZ 27/14 Overcoming barriers to wind project finance in Australia.**

Kann, S. Energy Policy, Volume 387 Issue 8 (August 2009) Pages 3139-3148.

The wind power industry in Australia is expected to grow rapidly over the next decade, primarily due to a forthcoming expanded national renewable energy target (RET) which will mandate that renewable sources provide approximately 20% of Australia's electricity production by 2020. However, development of new wind generation in Australia has stalled as a result of several barriers to project finance, the mechanism through which most wind farms have been developed historically. This paper provides an overview of wind power financing in Australia in light of recent political and financial trends. Drawing upon existing literature and a series of stakeholder interviews, it identifies three primary barriers to project finance: regulatory risk surrounding legislation of the RET, semi-privatization of electricity retailers in New South Wales, and limited capital availability resulting from the recent global credit crisis. The paper concludes that the confluence of these barriers limits the availability of long-term contracts that provide revenue certainty for pre-construction wind projects, while simultaneously making these contracts a necessity in order to obtain project finance. In an attempt to mitigate these effects, this paper identifies four alternative development strategies that can be pursued.

√IPENZ 27/15 Making judgment calls when the future is hazy.

Cairo, P. et al. Conference Board Review, Volume 46 Issue 4 (Summer 2009) Pages 56-61.

The article offers insights on how organization leaders can handle and manage ambiguities of the business's future.

√IPENZ 27/16 The X-factor : Six steps to leading high-performing X-Teams.

Ancona, D., Bresman H and Caldwell, D. Organizational Dynamics, Volume 38 Issue 4 (July-September 2009) Pages 217-224.

√IPENZ 27/17 John Lucian Savage.

Weingardt, R. Leadership & Management in Engineering, Volume 8 Issue 3 (July 2008) Pages 162-166.

Dams and canals feature strongly in John Savage's career. They include the Hoover Dam, Grand Coulee Dam and Shasta Dam. He was also involved with the All-American Canal, which was the largest canal constructed in the U.S. as at July 2008

√IPENZ 27/18 Tapping Communities of Practice : Enjoying the benefits and avoiding the pitfalls.

Kernon, S. Mechanical Engineering, Volume 130 Issue 10 (October 2008) Pages 22-224,26-27.

This article looks at the issue from the perspective of the engineer and the organisation. It defines the term, considers the roots of communities of practice and discusses their advantages. It also recommends that management stand back to give these communities space to operate organically so that they can be as effective as possible.

**√IPENZ 27/19 The effectiveness of Communities of Practice: An empirical study**

Hemmasi, M., Carol M Journal of Managerial Issues, Volume 21 Issue 2 (Summer 2009) Pages 262-279.

An increasingly popular mechanism to facilitate collaboration and sharing of information is Communities of Practice (CP). This paper presents the results of an empirical study that investigated the impact of some CP characteristics on overall community effectiveness and satisfaction of community members with their community experience. The CP characteristics considered in the study include community's leadership quality, CP members' affective commitment to the community and its goals, members' perceived connectedness with others in the community, trust among CP members, and perceived impact of CP involvement on members' own jobs. The data is based on anonymous surveys completed by 204 employees who were participating in the CP network of State Farm Insurance Companies. The results mostly support the hypothesized relationships regarding determinants of CP effectiveness.

√IPENZ 27/20 Improving the tender stage through integrating collaborative extranet with project integrated databases.

Maher A., Mustafa A. and Toufic, M. AACE International Transactions, (2008) Pages IT41-IT49,IT410-IT425

A gap has emerged between communication/processes and the 'added value' supplied by collaborative extranets versus the inability to exchange the project information at the fundamental level. This occurs for the entire construction cycle in general and more particularly for the tendering stage. This study aims to bridge this gap by developing a process model and system architecture to enable integrated databases to support collaborative extranets at the tender stage.

√IPENZ 27/21 **Risk and the media: A comparison of print and televised news stories of a Canadian drinking water risk event.**

Driedger, S. M. Risk Analysis: An International Journal, Volume 27 Issue 3 (June 2007) Pages 775-786.

This paper looks at the usefulness of risk researchers using media analyses for initial understanding of public perception of a risk issue or event based on how media present and communicate it. In risk research, both acute and chronic risk events tend to be covered in newspapers, while acute risk events feature in televised news broadcasts. The coverage provided by Canadian national television and newspapers of the E. coli contamination of a public drinking water supply are compared in this study. Content analysis shows that the coverage in both media was similar, but it should be noted that emotional story themes are carried by television while newspapers will usually also include analysis and process. Thus two conclusions are drawn: 1) newspaper broadsheets may give an improved measure of media coverage of a risk event due to the more comprehensive coverage (in cases where only one format can be investigated); and 2) when the risk is chronic and/or at a local level, the print media may be the more useful study format.

Technical Aspects of Engineering

√IPENZ 27/22 **Disproportionate collapse: a pragmatic approach.**

Starossek, U. Proceedings of the Institution of Civil Engineers : Structures and Buildings, Volume 160, Issue SB6 (December 2007) Pages 317-325.

√IPENZ 27/23 **Seismic and wind load considerations for temporary structures.**

Mohammad, j and Heydari, A. Practice Periodical on Structural Design and Construction, Volume 13 Issue 3 (August 2008) Pages 128-134.

√IPENZ 27/24 **A simple method for estimating flood flow around bridges.**

Seckin, G. et al. Proceedings of the Institution of Civil Engineers : Water Management, Volume 160, Issue WM4 (December 2007) Pages 195-202.

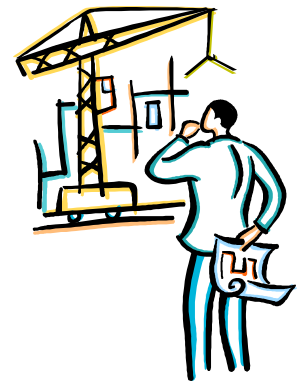
√IPENZ 27/25 **Seismic test proves design method for wood frames.**

ENR : Engineering News Record (27 July 2009) Page 14.

Reports on a shake table test in Japan which simulated a 7.5 earthquake on a 6 storey wood frame building.

√IPENZ 27/26 **Progress of advanced composites for civil infrastructure.**

Canning, L. et al. Proceedings of the Institution of Civil Engineers : Structures and Buildings, Volume 160, Issue SB6 (December 2007) Pages 307-315.



√IPENZ 27/27 **Intelligent compaction is on a roll.**

Van Hampton, T. ENR : Engineering News Record (13 July 2009) Pages 54-57.

Smart machines pose a radical change in project delivery and could save taxpayer \$100 billion a year in infrastructure costs.

√IPENZ 27/28 **32nd America's Cup structures in Valencia, Spain.**

Blanquer, J and Navarro, G. Proceedings of the Institution of Civil Engineers : Maritime Engineering, Volume 162, Issue MA2 (June 2008) Pages 49-55

√IPENZ 27/29 **Resilience to flooding: lessons from international comparison.**

Lamond, J and Proverbs, D. Proceedings of the Institution of Civil Engineers : Urban Design and Planning, Volume 162, Issue DP2 (June 2008) Pages 63-70.

√IPENZ 27/30 **Natural hazards and motivation for mitigation behavior: People cannot predict the affect evoked by a severe flood.**

Siegrist, M. and Gutscher, H. Risk Analysis: An International Journal, Volume 28 Issue 3 (June 2008) Pages 771-778.

√IPENZ 27/31 **Modelling enteric bacteria level in coastal and estuarine waters.**

Yang, L. et al. Proceedings of the Institution of Civil Engineers : Engineering and Computational Mechanics, Volume 161, Issue EM4 (December 2008) Pages 179-186.

√IPENZ 27/32 **Impact of battery weight and charging patterns on the economic and environmental benefits of plug-in hybrid vehicles.** Shiau, C et al. Energy Policy, Volume 37 Issue 7 (July 2009) Pages 2653-2663.



√IPENZ 27/33 **Biodegradable municipal solid waste: Biotreatment options.**

Banks, C. J and Steniford, E. I. Proceedings of the Institution of Civil Engineers : Waste and Resource Management, Volume 160, Issue WR1 (February 2007) Pages 11-18.

√IPENZ 27/34 **Comparison of aluminium and stainless steel built-in-storage solar water heater.**

Asif, M., Currie, J. and Muneer, T. Building Services Engineering Research & Technology, Volume 28 Issue 4 (November 2007) Pages 337-346.

√IPENZ 27/35 **Greening local energy: Explaining the geographic distribution of household solar energy use in the United States.**

Zahran, S. Journal of the American Planning Association, Volume 74 Issue 4 (Autumn 2008) Pages 419-434.

√IPENZ 27/36 **Megawatts of solar.**

Nelsen, D. Transmission & Distribution World, Volume 61 Issue 6 (June 2009) Pages 24-32.
Initial megawatt-scale rooftop systems will lead to a massive addition of photovoltaic to the distribution grid in Southern Carolina.

√IPENZ 27/37 **Energy saving and tourism sustainability: Solar control window film in hotel rooms.**

Chan, W. Journal of Sustainable Tourism, Volume 16 Issue 5 (2008) Pages 563-574.

√IPENZ 27/38 **Field tests on HDPE pipes installed using horizontal directional drilling.**

Gelinas, M., Polak, M and McKim, R. Journal of Infrastructure Systems, Volume 6 Issue 4 (2000) Pages 130-

√IPENZ 27/39 **Cost and risk evaluation for horizontal directional drilling versus open cut in an urban environment.**

Woodroffe, N and Ariaratnam, S. Practice Periodical on Structural Design & Construction, Volume 13 Issue 2 (May 2008) Pages 85-92.

√IPENZ 27/40 **A Swedish integrated pulp and paper mill : energy optimisation and local heat cooperation**

Klugman, S., Karrison, M and Moshfegh, B. Energy Policy, Volume 37, Issue 7 (July 2009), Pages 2514-2524.

√IPENZ 27/41 **Bus rapid transit systems : a Comparative assessment.**

Henscher, D and Golob, T. Transportation, Volume 35 Issue 4 (2008) Pages 501-518.

√IPENZ 27/42 **The carbon pollution reduction scheme – what is it and how will it affect developers?**

Parker, G. and Glassborow, K. Australian Environmental Review, Volume 24 Issue 6 (2009), Pages 12-14.

√IPENZ 27/43 **Landscape architecture rising.**

Post, N. Engineering News Review (ENR), Volume 263, Issue 1 (06 July 2009), Pages 86-90.

√IPENZ 27/44 **Numerical study of straight-bladed darrieus-type tidal turbine.**

Dai, Y. and Lam, W. Institution of Engineering (ICE), Volume 162, Issue EN2 (May 2009), Pages 67-76

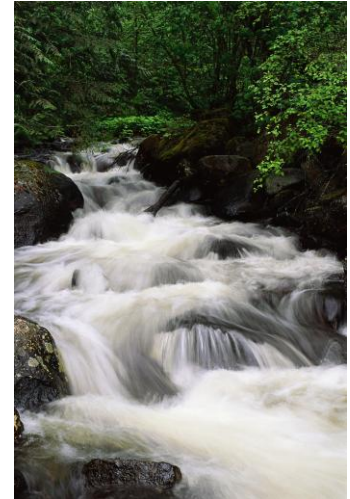
Special focus topic River Management

√IPENZ 27/45 Integrated water and catchment research for the public good: The Motueka River-Tasman Bay initiative, New Zealand.

Bowden W., Fenemor, A and Deans, N. International Journal of Water Resources Development, Volume. 20 Issue 3 (September 2004) Pages 311-323.

The Motueka Integrated Catchment Management (ICM) Programme aims to develop integrated, multidisciplinary research approaches to deal with water resource management. Started in 2000, the programme is focused on the Motueka River catchment and Tasman Bay. Even though the Motueka catchment is thinly populated, it is intensively used and very productive, including commercial forestry, irrigated berry and pip fruit production, dry land pasturing (sheep), and irrigated dairy farming.

Extensive parts of the headwater areas are recreational park and conservation lands, while the river itself has an international reputation for trout fishing and parts of it are a significant habitat for native and threatened Galaxiid fish. Sixty-five percent of Tasman Bay receives its freshwater inflow from the Motueka River and it has commercial significance in terms of scallop and mussel fishery, encompasses a marine sanctuary of national importance and is extensively used for recreational purposes. Water quality is currently mostly high, although some land uses could threaten this, whereas water quantity has been an ongoing concern in such a seasonally dry region. The paper summarises the early experiences of the authors, as scientists and managers, in advancing an integrated biophysical and social research programme whose aim is sustainable water resource management in the Motueka catchment. The developed framework for dialogue and action has relevance to other areas of New Zealand and could be of use especially in areas where protecting existing values in a productive landscape is paramount, rather than restoring degraded values in a damaged landscape.



√IPENZ 27/46 River restoration in Victoria, Australia: Change is in the wind, and none too soon.

Brooks, S and Lake, P. Restoration Ecology, Volume 15 Issue 3 (September 2007) Pages 584-591, Although stream restoration is big business worldwide, there are not many obvious success stories and the scientific basis for effective stream restoration is still unclear. The study looks at data on river restoration projects that have been completed from four management authorities in Victoria in order to investigate how this data could expand knowledge of restoration ecology in rivers and thereby ameliorate restoration efforts in the future.

√IPENZ 27/47 Saving the San Pedro River: Science, collaboration, and water sustainability in Arizona.

Saliba, G and Jacobs, K. Environment, Volume 50 Issue 6 (November/December 2008) Pages 30-43. This article deals with the San Pedro River in Arizona and how its health is affected by science, collaboration and water sustainability. While wildlife requires a continuous base flow of water, groundwater pumping for human use has resulted in a growing depletion of the river basin. This impacts both plants and animals. The effects of population pressures, climatic changes and rising water usage in arid and semi-arid regions are discussed.

√IPENZ 27/48 **Development of a tool to facilitate participation of Maori in the management of stream and river health.**

Townsend, C. EcoHealth, Volume 1 Issue 2 (June 2004) Pages 184-195.

Collaborative research involving members of Ngai Tahu and ecologists at Otago University resulted in the development of a cultural health index (CHI) for streams that seeks to provide a tool for effective participation by Maori in decisions concerning resource management. Five cultural values of prime significance to the nature of the CHI are: mauri (spiritual life force), mahinga kai (traditional resource harvesting), kaitiakitanga (guardianship obligation), ki uta ki tai (mountains-to-the-sea holistic philosophy), and wai taonga (waters that are treasured). There are three components to the CHI. Firstly, 46 stream sites in two culturally significant catchments were classified as regards traditional association with Maori. Secondly, the historical and contemporary mahinga kai status of the site was assessed. Thirdly, indicators of catchment, riparian and instream condition were encapsulated in a Cultural Stream Health Measure (CSHM) consistent with Maori values. It appears that the CSHM significantly correlates with "western" measures of stream health frequently applied in New Zealand while performing at least as well in encapsulating the relationship between land development and stream health. The multistep process that is described can be used by other indigenous people to develop a cultural ecosystem health measure and then ensure a considerable role in decision making with the appropriate agency.

√IPENZ 27/49 **New Zealand freshwater management and agricultural impacts.**

Cullen, R, Hughey, K and Kerr, G. Australian Journal of Agricultural & Resource Economics, Volume 50 Issue 3 (September 2006) Pages 327-346.

Today there is growing recognition that resource allocation and water quality are issues of national importance in New Zealand. The media often portray agriculture as a significant user of water and a significant contributor to deteriorating water quality. The water management systems in New Zealand and water use by agriculture are outlined in this article. Summaries of official reports on the effect of agriculture on New Zealand water availability and quality are presented. In addition, public perception of water, its management and the roles of agriculture are reported on. This includes analysis of a nationwide mail survey regarding how New Zealanders evaluate the state of lakes, rivers, streams and aquifers, how the three agencies responsible for managing freshwater resources are performing, and how much willingness there is to fund stream enhancement. Options in response to the growing public, scientific and government concerns are also reviewed.

√IPENZ 27/50 **Relative elevation topographic surface modelling of a large alluvial river floodplain and applications for the study and management of riparian landscapes.**

Greco, S. Landscape Research, Volume 33 Issue 4 (August 2008) Pages 461-486.

The novel and useful spatial modelling technique that is presented in this paper aims to create a topographic surface that estimates a floodplain's elevation compared to the average low-flow water surface of a river channel. It was tested in a 121 km study area of the middle Sacramento River in California as a substitute for observed water table depth as well as an observed 3.3 year recurrence interval flood inundation surface utilising independent data sets.

√IPENZ 27/51 Integrated river basin plan in practice: the São Francisco River Basin.

Braga, B and Lotufo, J. International Journal of Water Resources Development, Volume. 24 Issue 1 (March 2008) Pages 37-60.

In order for Integrated Water Resources Management (IWRM) to be utilised in real life cases, the concept requires breaking down. This is done in this paper so as to take into account the myriad objectives and uses of water, the inclusion of other sectors in the planning process and the participation of stakeholders in the process of decision-making. IWRM is used to develop an integrated water resources river basin plan for the river basin of the Sao Francisco, which has an area of 600 000 km² with important ecological, climatic and socio-economic diversity. The plan and the process are presented in this paper.

√IPENZ 27/52 Wake up to realities of river basin closure.

Falkenmark, M and Molden, D. International Journal of Water Resources Development, Volume 24 Issue 2 (June 2008) Pages 201-215.

River basin water resources are more and more controlled, diverted and consumed for domestic, agricultural and industrial purposes and so addressing the rising demands from these various interests and sectors becomes problematic. When additional water commitments cannot be covered during all or part of a year, basins are closed and as a result 1.4 billion people live in areas confronted with this issue. Societies may come up with assorted ways of dealing with this problem, such as reallocation of water, demand management or interbasin transfers. Yet 'quick-fix' measures, including extra groundwater or surface water exploitation or badly-planned water appropriation, are not uncommon. Groundwater overdraft, limited or no environmental flows, pollution and unequal water allocation are some of the signs of poorly managed closed basins. It is surprising that little attention has as yet been given to this vital water issue.

**√IPENZ 27/53 The rocky road from integrated plans to implementation: Lessons learned from the Mekong and Senegal River Basins.**

Varis, O., Rahaman, M and Stucki, V. International Journal of Water Resources Development. Volume 24 Issue 1 (March 2008) Pages 103-121.

Especially in large, transboundary river basins, it is essential to coordinate and harmonise water sector policies on a global basis and so sizeable international summits have taken place in recent decades. This paper analyses the most significant events from the United Nations Conference on Water (Mar del Plata 1977) to the Fourth World Water Forum (Mexico City 2006). The major results of the events are analysed and compared with what has happened in the water sector in the Mekong and Senegal river basins. There appear to be considerable disparities between international recommendations and reality in large international river basins and the progression of the quality of the recommendations per se also seems to be somewhat questionable.

√IPENZ 27/54 Two decades of river restoration in California: What can we learn?

Kondolf, G. Restoration Ecology, Volume 15 Issue 3 (September 2007) Pages 516-523.

From a summary database of 4,023 Californian stream restoration projects, 44 were chosen for in-depth interviews with the project managers. Conclusions were drawn relating to current design, implementation, monitoring, and evaluation practices used in these projects as compared with national trends.

√IPENZ 27/55 **River enhancement in the Upper Mississippi River Basin: Approaches based on river uses, alterations, and management agencies.**

O'Donnell, T and Galat, D. Restoration Ecology, Volume 15 Issue 3 (September 2007) Pages 538-549.

There is a succession of locks and dams, shallow impoundments and thousands of river channelization structures to aid commercial navigation between Minneapolis, Minnesota, and Cairo, Illinois. During the past 200 years water quality has deteriorated and the rate of sediment and nutrient delivery to surface waters has increased due to agriculture and urban development. To address the causes and effects, river enhancement has been a significant management tool. This paper reports on river enhancement projects and contrasts project densities, goals, activities, monitoring and cost between commercially non-navigated and navigated rivers. The most frequently cited project goal within the basin was water quality management. For Navigated Rivers, in-stream habitat improvement and modification were also important.

√IPENZ 27/56 **Nitrogen removal in streams of agricultural catchments - a literature review.**

Birgand, F. Critical Reviews in Environmental Science & Technology, Volume 37 Issue 5 (September 2007) Pages 381-487.

Worldwide the primary cause of serious water quality problems in estuaries and coastal waters has been acknowledged to be excess nutrient loads, with agriculture recognised in many areas as the largest single source of nitrogen emissions to the aquatic environments. With increasing awareness that nutrient management must be handled at the watershed scale, it is vital to understand and quantify the fate of nutrients at the field scale as well as after entry into the aquatic environment. Despite pervasive evidence that nitrogen can be removed from water during its transport downstream in watersheds or basins, as yet there has been no overview to summarise qualitatively and quantitatively the information available in the literature. Hence this review of the biogeochemical processes involved in nitrogen removal in streams, the rates of removal reported as well as the factors influencing those rates.

√IPENZ 27/57 **Restoring rivers one reach at a time: Results from a survey of U.S. River Restoration Practitioners**

Bernhardt, E. Restoration Ecology, Volume 15 Issue 3 (September 2007) Pages 482-493.

Although over 1 billion dollars is spent annually on river restoration efforts, not much is known about most of the project motivations, actions and results. Confidential telephone interviews with 317 US restoration project managers were conducted so as to assess project motivations and evaluation metrics as well as to estimate the share of projects that set and meet criteria for projects that are ecologically successful. Project managers reported that ecological degradation most commonly motivated restoration projects while positive public opinion was the most frequent metric of success. Whereas under half of all projects had measurable objectives, nearly two-thirds of project managers asserted that their projects had been "completely successful". The absence of funding for and emphasis on project monitoring was a frustration for many interviewees. The authors recommend direct, collaborative involvement between scientists, managers, and practitioners in order to advance progress in the science and application of river restoration.