Sacred cows, storylines and nirvana concepts: Insights from the water sector[1]

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1. Introduction

Human mental maps, judgments and decisions are necessarily structured, or at least influenced, by past experiences, formal training, world-views and idiosyncrasies. Likewise, one's inclinations and ideologies are rarely independent from one's individual interests. The field of development sciences, just like other fields, is prone to successive, sometimes cyclical, discoveries and theories that inform or inspire practice for a number of years (Cornwall and Brock, 2005). For some, these are mere 'fads of the day' propped up by 'buzzwords;' for others, they reflect the evolution and gradual refining of knowledge and concepts; and for still others, they reflect the power, and embody the world-view, of those who have the power to disseminate them.

This paper proposes a tentative and preliminary reflection on how one particular sector of development - the development and management of water resources - is influenced by ideas that manifest through ubiquitous and proliferating 'success stories,' 'best practices,' 'bright spots,' or 'promising technologies' readily promoted as universal and transferable to other contexts. The paper distinguishes between three different types of concepts that shape policy and decision making in the water sector nowadays. Nirvana concepts, storylines and models/icons are all ideational and ideological objects which emerge at some point in time to epitomize a certain view, approach, or 'solution:' over time, these conceptual objects tend to acquire a life of their own; they may get reified, reworked and re-appropriated. The epidemiology and the eventual fate of these concepts will depend on many factors, not least their usefulness for particular actors and constituencies that will re-appropriate, repackage and integrate them into their discourses and strategies.

Nirvana concepts form the overarching framework that legitimizes particular storylines (or simple, causal and explanatory beliefs) addressed by specific attendant blueprints and models of both policies and development interventions. The paper successively reviews how these three types of concepts populate the water sector and then investigates the epidemiology of these concepts before concluding on the implications of the analysis for policy making and practice.

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2. Nirvana Concepts

Nirvana concepts are concepts that embody an ideal image of what the world should tend to. They represent a horizon which individuals and societies should strive to reach. Although, just like for Nirvana, the likelihood that we may reach them is low, the very possibility of achieving them suffices to make them an attractive and useful focal point.

Nirvana concepts are usually formed as a 'photo negative' of the real world. For example, with the social and environmental costs of conventional industrial development becoming apparent, the concept of *sustainable development* proposed a vision whereby contradictions would be dissolved, negative impacts internalized, and antagonisms reconciled. Likewise, the concept of *good governance* emerged as a model in which inefficient, corrupt, biased and discriminatory governments would - under growing transparency and power-sharing - become accountable to their populations and act for the common good. *Participation* or *empowerment*, at some level of generalization, also appears as desirable counterpoints to exploitation and disfranchisement. All these words are ‘warmly persuasive" (Williams 1976:76), nice-sounding, sanitized, and endowed with ‘almost unimpeachable moral authority’ (Cornwall and Brock, 2005).

In the field of water, the main obvious Nirvana concept is Integrated Water Resource Management (IWRM). IWRM evolved from the correct perception that water management has been des-integrated, or fragmented: economic sectors and ministries have been managing water independently, while interventions in, and development of, water resources in upper catchments have taken place without considering impacts on downstream areas. Likewise, water-quality issues have been often either disregarded or disconnected from quantity issues, groundwater has been frequently used without concern for its hydrological linkages with surface water (and vice versa), and land-water interactions have been overlooked. These and other problems led to a situation of perceived crisis where, in the wake of the 1992 Dublin Conference and the endorsement of the economic dimension of water, IWRM was conceptualized as the opposite of this rather chaotic situation, conveying the vision of a world where the multiplicity of desired goals is reaffirmed and where imbalances are redressed.

According to its most frequently used definition, ‘IWRM is a process which promotes the co-ordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems’ (GWP, 2000). An important aspect of the definition is its emphasis on the process dimension of IWRM. This rightly suggests that IWRM is a moving target since new problems emerge and evolve with time, demanding growing flexibility and attention to these changes; in addition - just like Nirvana - the objective is never or seldom reached and the crux is, rather, about inching toward and getting closer to it.

However, IWRM faces two difficulties, inherent in Nirvana concepts. By nature, it is attractive and woolly consensual (by definition nobody is against Nirvana) and as such: a) obscures the political nature of natural resources management; b) is easily hijacked by groups seeking legitimacy for their own agenda (Wester and Warner, 2002). The definition emphasizes the three desired ‘E’s (Efficiency, Equity and Environmental sustainability) but implies that they can be achieved concomitantly if - as the word 'maximize' suggests -

problem-solving can be informed by neutral and rational approaches, good science[3] and expert knowledge that reflect these three dimensions, rather than by one of them only. This particular viewpoint is apparent, for example, in the definition of IWRM given by USAID (2007a) as

'a participatory planning and implementation process, based on sound science, that brings stakeholders together to determine how to meet society's long-term needs for water and coastal resources while maintaining essential ecological services and economic benefits. IWRM helps to protect the world's environment, foster economic growth and sustainable agricultural development, promote democratic participation in governance, and improve human health.'[4]

Little suggests that the three goals of IWRM are frequently - if not always - antagonistic (hence the conflicts), that the key word here is trade-off, and that trade-offs in such situations are hard to achieve, meaning that all parties will have to relinquish something and that the outcome of painful and often lopsided political processes will generally fall short of the 'optimal.' Patterns of participation tend to reflect power asymmetries rather than evening them out. In other words, the definition of access to scarce and contested resources is inherently political.

To be fair, participation is made a key component of 'IWRM in practice' but the approach nevertheless draws more on instrumental rationality to be informed by good will and good data (hence, the pivotal roles of the state in empowering people and of experts in providing information) than on the politics of resource management (Miller and Hirsch, 2003; Biswas, 2004; Merrey et al., 2007; Molle et al., 2007). In the background proper 'policies and institutions' are to be in place and the governments must be able to exercise 'their responsibilities of good water governance,' while 'ensuring empowerment of the poor.' Support to the policies is crucial and 'conscious actions to build consensus, also at the highest political level must be built into the process;… awareness raising and multi-stakeholder involvement is critical to the success' (Jonch-Clausen, 2004; UNDESA and GWP, 2006).

South Africa (and Zimbabwe) provide a good example of how IWRM was enthusiastically adopted by governments as a common ground for black and white water users, holding the promise to - in its South African definition - deliver 'equitable access to and sustainable use of water resources by all stakeholders at catchment and regional levels, while maintaining the characteristics and integrity of water resources within agreed limits' (Pollard, 2001). However, after ten years of experience, expected benefits have not materialized (Manzungu, 2002; Merrey, 2007). Although experience varies, and reasons for unfulfilled promises are diverse, powerful users tended to dominate catchment councils and power asymmetries

[3] RBOs, for example, are said to be "increasingly promoted as a scientific/rational means of administration for water" (UNDESA and GWP, 2006).

[4] See also, among other examples, the definition given by FIU (2007): 'IWRM integrates policies and management activities to ensure sustainable supplies of freshwater for 1) the multiple sectors of human use and development (domestic, agricultural, industrial, etc.), 2) in-stream needs for ecosystem processes and biodiversity conservation, and 3) the needs of upstream and downstream human communities and ecosystems, including coastal zones'. ADB (2006) states that 'IWRM is focused on *delivering a triple bottom line* of a balance of economic, social, and environmental benefits resulting from an integrated approach that carefully considers each trade-off' (emphasis added).

surfaced when hard-nosed issues such as water-sharing agreements were considered. In other words, while IWRM provided a consensual starting point in a context of racial discrimination, politics, initially glossed over, quickly reappeared. In the Olifants river basin, for example, the Kruger Park, the mines or large white farmers producing fruit for export markets soon dominated the process.

If promoters of IWRM are aware of the crucial importance of these political prerequisites these are simply assumed as 'necessary' or 'clearly needed': there is of course little that outsiders can do to ensure these factors will not derail the process but the result of this discrete wishful thinking is to give prominence to what government agencies traditionally do (or at least to their purported role): identification of gaps, capacity-building, awareness-raising, 'rational' cyclical/iterative policy or planning processes, convening of stakeholders, monitoring, etc. As a result, the process appears to be naturally steered by the state (the 'natural' interlocutor of banks and cooperation agencies), with a high likelihood of reproducing paternalistic, technocratic and bureaucratic top-down conventional approaches, qualified by whatever degree of participation will be allowed. [5]

Likewise, although IWRM is said to be a 'cyclic and long term process' (Jonch-Clausen, 2004), the call of the World Summit on Sustainable Development (WSSD), held in Johannesburg in 2002, for all countries to 'develop integrated water resource management and water efficiency plans by 2005, with support to developing countries' paints it as something that is to be established by governments in a 3-year period relying on traditional expertise from outsiders.

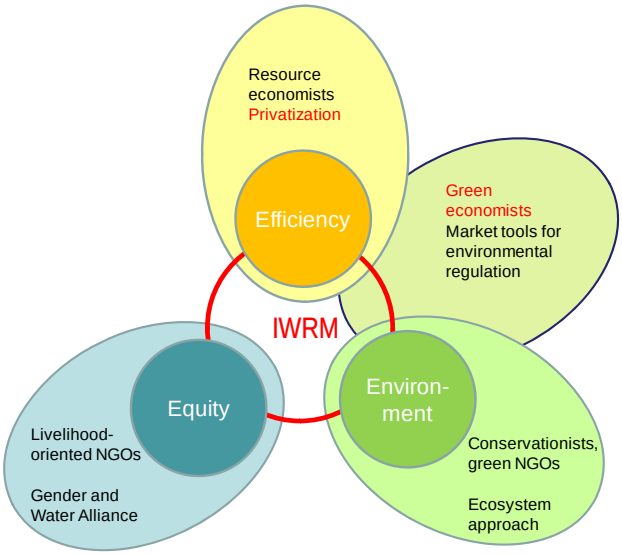
Jonch-Clausen and Fugl (2001) fear that IWRM may have 'degenerated into one of these buzzwords that everybody uses but that mean many different things to different people.' Just like participation, IWRM appears as something desirable and uncontroversial, and official documents can resort to it abundantly and at 'no cost.' IWRM provides common ground and an initial consensus; it is seemingly sanctioned by the 'water community,' and appears to convey legitimacy earned in multiple international forums It thus becomes a coveted discursive currency that is also likely to be hijacked by state, sectoral or private interests seeking to legitimize their agenda. Biswas (2004) remarks that 'because of the current popularity of the concept, some people have continued to do what they were doing in the past, but under the currently fashionable label of IWRM in order to attract additional funds, or to obtain greater national and international acceptance and visibility.'

Indeed, the use of IWRM as a political currency is apparent in the way it is appropriated by all players or actors indistinctly. Yet, each category of player emphasizes one of the tenets of IWRM that reflects its own inclination, ideology or interest (see figure below). For example, supporters of privatization or those who see the maximization of aggregate welfare as a priority objective will promote the 'efficiency' pillar of IWRM and its view of water as an economic resource. Livelihood-oriented NGOs or social activists will use the concept as a means to further equity concerns and social agendas.[6] The Gender and Water Alliance, for

[5] Adoption of IWRM is always referred as something 'countries' should do ('Countries in transition may see IWRM as a rational approach…', 'Developed countries may find valuable inspiration…'; 'how can countries overcome these challenges…?' etc.). Since strategies and polices are designed by governments and experts it is clear that 'countries' refers, in practice, to governments.

[6] GWP (2003) is a response to the realization that the "E" of Equity has tended to be forgotten.

example, got hold of the concept and published a guide titled ‘Mainstreaming Gender in Water Management’ that sees IWRM as ‘offer[ing] an opportunity to create a paradigm shift in water resources management;’ a gender perspective in IWRM is deemed necessary for a variety of reasons but this perspective offers opportunities to expand the social agenda since ‘gender in this context is not a sufficient point of analysis without also considering intersecting identities of race, class, caste, ethnicity, age, ability, and geographical location’ (UNDP and The Gender and Water Alliance, 2006). While complaining that participation is used as a fig leaf and that the conventional integrated river basin management approach ‘ends up as a coordinating platform for technocratic representations’ other NGOs still support river basin organizations (RBOs) as a valid concept as long as they are a vehicle for bottom-up planning (NGO Forum, 2005). Likewise, conservationists or green NGOs have used IWRM to promote conservation of nature or environmentalism in general: the 'Ecosystem approach' incorporated in the Convention on Biological Diversity (CBD, 2000), and promoted by several NGOs and international organisation (e.g. IUCN), is a perfect example of a reading (and translation) of IWRM with ecosystem preservation as a starting point and overarching goal.



More generally, consultant firms, bureaucracies and development banks adapt their discourse and repackage their policies and approaches. Here IWRM is used to uphold and give legitimacy to conventional developmental approaches. The use of the IWRM rhetoric as a depoliticizing act is therefore profoundly political in itself, as it does not critically question - but, rather, reinforces - the traditional role, mandate and worldview of the main actors in water resources management, favouring the *status quo* and business-as-usual strategies.

Consultant firms, for example, have recycled many structural water resources development projects as part of new 'participatory' and 'integrated' river basin comprehensive plans which, despite evidence to the contrary, claim to differ from past master plans (Molle, 2005). Development banks or cooperation agencies have also embarked on rural development projects shrouded in a watershed or river basin rhetoric (see Molle and Hoanh, 2007, on Vietnam) and have promoted policy reforms with standard prescriptions allegedly sanctioned by IWRM (establishment of 'apex bodies', RBOs, water rights, services providers, cost-sharing agreements, etc.; see, for example, ADB, 2006). Just as all their actions contribute to

poverty alleviation, projects have become IWRM achievements.[7] State bureaucracies, including line agencies, have seemingly often discovered that they had been doing IWRM without knowing it and had later framed their actions accordingly.[8] The tendency is for the state to use IWRM like other overriding concepts (food security, national independence, self-sufficiency, poverty alleviation, etc.) commonly manipulated to close debates and impose predetermined agendas.

It is difficult to estimate the role of IWRM in the design of new water policies and opinions on its efficiency vary widely. While Jonch-Clausen (2004) posits that it has inspired reforms that aim at more integrated management, Biswas (2004) believes one can successfully argue that the IWRM label has not 'made any difference'. Monitoring progress, evaluating change or singling out success stories becomes essential in the continued promotion of IWRM. Thailand, for example, is held by the GWP as a good example of a country implementing IWRM because it has established formal RBOs in its 25 river basins, designed a 'policy with full stakeholder participation,' while a 'framework water law is under preparation through an open and participatory process seeking the views of the stakeholders' (Jonch-Clausen, 2004). This view emphasizes the formal existence of institutions and tends to equate participation with the conduct of meetings or public hearings.[9]

In sum, despite all these misuses of the concept as a fig leaf, IWRM can also be conceived of as a 'boundary object' (Cash et al. 2002): a concept that all parties will appropriate and use and also remodel by their own discourse and practice. As such, it can be seen as a collective construct offering common grounds to stakeholders willing to engage other parties. Inclusion of environmental sustainability has, for example, enabled easier propagation of the concept of *environmental flow* (e-flows) as an apparently technical word which allows discussion on more sensitive allocation issues. In that sense, IWRM may also have allowed, just like concepts of good governance or participation (see Mollinga, this issue), to reintroduce politics and the acknowledgement of the relations of social power by the back door, even though these had been obfuscated.

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[7] As is apparent from USAID's (2007b) webpage on 'IWRM success stories', every story from villages gaining access to freshwater in Sudan to upgrading an Iraqi canal system, or from a fish company tapping into global markets in Romania to purifying water for Haiti's flood victims, seems to qualify as an IWRM achievement.

[8] In Egypt's Integrated Irrigation Improvement and Management Project (IIMP), presented as an IWRM undertaking (UNDESA and GWP, 2006), 'Water management is best improved by an integrated package of services and technical assistance that responds to the user's demand… [while] many kinds of technology and expertise will be used to optimize the results of [the project] activities'. See, also, a document on Laos: 'The immediate objective of the Water Sector is to foster and institutionalize the IWRM approach in the mainstream planning process of the Government both at the central as well as at the provincial level' (Anonymous, 2004).

[9] For an extreme case of simplification of assessing 'progress toward IWRM', see JPW (2006) where participation is assessed by yes/no answers to two questions: 1) Do you have a legal framework for participation of stakeholders; 2) Is there government spending for participation of concerned parties?

3. Narratives and Storylines

A narrative is a story that gives an interpretation of some physical and social phenomena. Many people organize daily experiences and beliefs gathered from social interactions in logical relationships from which they derive opinions on what is desirable and what is not. Narratives first establish causal relationships between two negative aspects of a particular development problem. These relationships often draw on common sense and thus appear little controversial, obfuscating both the complexity of the processes at play and, sometimes, their ideological underpinnings: waste (or pollution) of resources is due to insufficient pricing that does not reflect real costs (hence the necessity to price water); flood (or droughts) are due to deforestation, themselves a result of abusive slash-and-burn (conservation and afforestation will counterbalance this state of affair); poor performance of water user groups is due to lack of human capital or obstructive bureaucracies (training is needed); lack of private investment is due to insecure tenure (definition of rights and titling is the solution); limited agricultural diversification is due to the lack of flexibility of irrigation networks (which need modernization), etc.

Resume The 'naturalness' of narratives, or storylines, seemingly anchored in common sense, makes them very resilient. Their appeal comes from the resultant legitimacy they can bring to policies and development programs they help rationalize in terms of intended targets and means to be deployed to achieve them. By nature, they simplify and offer a stable vision and interpretation of reality, and are able to rally diverse people. The combined actions of these people in the promotion of a storyline tend to coalesce into networks and what Hajer (1995) defined as discourse coalitions: a set of storylines and the actors who promote these storylines and the practices in which the discursive practices are based. When a set of actors is trying to establish hegemony and to close the debate, several coalitions may emerge, united by their respective storylines.

Narratives, just like policies (Mosse, 2004), are often self-validating because they tend to produce evidence rather than the other way around. If they are at fault it is because the prescription has not been well implemented, or not enough. Higher water prices, more trees, or more training would have done the job but unfortunate circumstances limited the full realization of the intended, or expected, benefits.[10] So even non-realization validates the initial causal postulate (Rap, 2006).

For the sake of illustration I will consider here the ‘free water’ storyline (see more in Molle and Berkoff, 2007a). The causal model of this narrative is based on the banal and straightforward everyday experience that cheap or free goods and services tend to be wasted. If my son doesn't pay for electricity (which he doesn't) he will probably not bother switching off the light or the heater when he leaves his room (as, indeed, is the case). If my neighbour doesn't pay enough for water he will have incentives to leave the hose of his garden open the whole night, or wash his car lavishly (which he does). In sum, cheap goods beget waste. This obviousness has affinity with the ‘lion's share’ narrative: agriculture is responsible for 70% of the world water withdrawals and often ‘gobbles’ up to 90% or more in developing countries. This lion's share is, in turn, associated with the common wisdom that irrigation is a wasteful

[10] This is germane to debates in economics where liberal policies fail because deregulation has not been complete and state action not fully dispensed with.

process, epitomized by the ubiquitous statement that its efficiency is low and that 60% of water deliveries fail to reach the fields (The Economist, 2003). The conclusion naturally follows that raising water prices will force squanderers to save water which will be made available to cities or to restore ecosystem health.[11]

A huge literature on the subject developed during the 1990s and early 2000s[12], largely fuelled by the World Bank and other mainstream institutions. Books, conferences, and journal articles reported on the potential of pricing for demand management and conservation. Although the role of water charges for operation and maintenance and as a basis for the financial and managerial autonomy of water user associations was well recognized in the mid-1980s, the role devoted to economic instruments was greatly inflated during this period. According to the World Bank Strategy of 1993 'setting prices at the right level is not enough; prices need to be paid if they are to enhance the efficient allocation of resources' (World Bank, 1993); for Johansson (2000) 'The fundamental role of prices is to help allocate scarce resources among competing uses and users. One way to achieve an efficient allocation of water is to price its consumption correctly.' With higher prices that reflect opportunity cost, the reasoning goes, low-value activities are phased out, thus releasing water for high-value uses and raising social welfare. For a number of reasons, the policy bubble formed during this period was substantially deflated in recent years. It is interesting to draw a few lessons about the 'lifetime of an idea' (Molle and Berkoff, 2007b).

First, this example provides a good illustration of how the epistemic community that gradually formed around irrigation price-based incentives largely extended from mainstream economic departments in university and international organizations to reach policy-makers in all countries, and eventually percolated down to national water laws. The narrative developed by conflating evidence on the effectiveness of pricing policies in the domestic and industrial sector with agriculture, without differentiating between sectors. Many studies referring to agricultural uses were based on econometrics (where correlation and causality are often undistinguished) or on modelling (based on mere farm budgets, which in any case often showed that using prices to regulate use was not economically and politically feasible). Unfortunately, the niches were such incentives can be effective as rather narrow, because of

[11] The link between water waste and under-pricing has been hammered by all water related institutions, ranging from the President of the World Bank ("the biggest problem with water is the waste of water through lack of charging": Wolfensohn, 2000), to the World Water Vision ("users do not value water provided free or almost free and so waste it": Cosgrove and Rijsberman, 2000), and to environmentalists who favour "developing a pricing system that prevents excessive use of water" (WWF, 2002). For the EU (2000) "Efficient water pricing policies have a demonstrable impact on the water demand of different uses. As a result of changes in water demand, efficient water pricing reduces the pressure on water resources. This is particularly true for the agricultural sector." See also: "Inefficient pricing and management of irrigation water supply leads to massive wastage" (Hansen and Bhatia, 2004).

[12] The string 'water pricing' submitted on Google yielded 19,500 hits in October 2003 against 338,000 in March 2007.

several constraints specific to irrigation (for more details see Bosworth et al. 2002; Cornish and Perry, 2003; Hellegers and Perry, 2004; Molle and Berkoff, 2007a).[13]

Despite the limited evidence of success the idea largely turned hegemonic –at least in the development establishment- and it became increasingly difficult to offer unorthodox points of view. For example, a review of experience in one region of the world on the existence of a link between prices and efficiency concluded 'to a certain extent, yes', while showing at the same time how little impact there was for a number of reasons. Is not the subtle (and unconscious) semantic shift from "To a large extent there is no evidence that…" to "To some extent, there is evidence that…' what characterizes the hegemonic nature of a narrative?

This example also shows the resilience of narratives. As observed by Roe (1991) narratives tend to acquire a life of their own and are not easily debunked by contradicting empirical evidence, as 'they continue to underwrite and stabilize the assumptions' for policy-making 'in the face of high uncertainty, complexity, and polarization'. For example, although the narrow concept of irrigation efficiency has been shown to be misleading as far as basin management is concerned, decision-makers continue to justify costly canal lining programs in order to 'avoid losses' even in closed basins where no water flows out, with little attention on how water is implicitly reallocated through these interventions.

Enduring narratives are perhaps most prominent in the economic science. Easterly (2001) has shown how various narratives that all underpinned the logic of aid and external capital investment in developing countries have showed incredibly persistent and resilient, continuing their life among practitioners much after they had been debunked or proved wrong by scientific work. All these narratives are appealing, simple, and draw on common-sense. They are often sound in particular contexts but their generalisation across the board take them into uncharted terrains where they cease to be valid.

4. Icons and models

A third type of conceptual object is that of models. Models are based on particular instances of policy reforms or development interventions which ostensibly embody a dimension of 'success' and qualify as 'success stories'. They are apparently sanctioned by experience, experts, and powerful institutions, and seemingly minimize risk. Often, especially when they serve wider national interests such as state-building or geopolitical pursuits, models tend to become reified into icons or 'sacred cows'. Although we are chiefly concerned here with policy making, models of course pervade all strands of practices and disciplines: in the field of hydraulics, for example, they will support either upstream or downstream regulation, simplified or elaborate designs, overshot or undershot gates. Agronomists will promote zero tillage models or integrated pest management, sociologists community forestry management, extensionists the 'Training & Visit' approach, etc.

[13] Many factors make irrigation different from the domestic sector. Farmers are "water takers" using whatever water is made available to them by irrigation agencies and not (or rarely) customers who can access water at will; in addition, incentives for saving water can only be effective when charges are volumetric, an exception rather than the rule. Even in such cases prices are often too low to incentive users to save water and scarcity is invariably managed through quotas, with prices only regulating overuse at the margin. See Molle and Berkoff (2007a) for more details.

In the water sector, three well known models can be given as examples. The first one is the Chilean model of water markets; the second is the Mexican model of Irrigation management Transfer (IMT); and the third one is the concept of river basin organization with several icons vying for pre-eminence, including the Australian Murray-Darling Basin Commission model, the French Agences de l'Eau, and the US Tennessee Valley Authority (TVA).

The Chilean water markets.[14] In 1981 Chile enacted a Water Code that recognized private property rights in water and allowed transactions through a free market. This reform was part of –and in line with- the deep influence of the 'Chicago Boys' in the shaping of Chile's economic policy. The application of the code and the initial experience with water markets were documented in the early 1990s by a few publications that were subsequently taken up by the World Bank which, together with the Inter-American Development Bank, IFPRI, a number of American universities and related institutions, was instrumental in spreading it as a success story (Gazmuri, 1994; Rosegrant and Binswanger, 1994; Rosegrant and Gazmuri, 1994; Hearne 1995; Hearne and Easter, 1995, 1997, 1998; Holden and Thobani, 1996). According to Bauer (2004) 'Since the early 1990s, these proponents have used their considerable resources and influence to promote a simplified description of the Chilean model, both elsewhere in Latin America and in the wider international water policy arena.' Countries like Mexico, Bolivia and Argentina were influenced by the model and its transposition to Peru has long been advocated (Thobani, 1994; Trawick, 2003).

Although proponents sometimes recognize flaws in the model, the general tendency is to downplay the importance of those flaws and to ascribe them to the haste to get effective markets established (Rogers and Hall, 2002) and to stress, instead, the purported 'adaptiveness' of the system. Problems encountered include 'a range of critical water management issues, such as social equity, environmental protection, river basin management, coordination of multiple water uses, and resolution of water conflicts' (Bauer 2004) and a number of studies have documented the flaws or the limitations inherent in the model (for example: Bauer, 1997; Hadjigeorgalis and Lillywhite, 2004; Hadjigeorgalis, 1999; Budds, 2002; Zegarra, 2002; Hendriks, 1998; Dourojeanni and Jouravlev, 1999; Boelens and Zwarteen, 2005; CEPAL, 2004). Yet, it is striking to see the pervasiveness of the success associated with this iconic model in today's literature: this is not to discard its own merits but to stress how common knowledge is not updated or qualified, at least in wider international circles where the model has continued to play its role in the promotion of tradable water rights. Likewise, the iconic South-African Water Law, with its 'reserves' for the poor, its provisions for environmental flows, and its Catchment Management Agencies has been (and still is) highly praised and has become a world-wide model. Yet, and without overlooking the positive aspects and the inspirational role of the model for other countries, increasing evidence that its achievements are falling short of promises remains confined to some specialized literature (Merrey, 2007).

The power of the Chilean model is also well illustrated by an anecdote reported by an expert who had worked with the government of an unnamed Latin American country to draft a new water law. After lots of expert reports, consultants, etc., the key government minister threw the whole pile of studies and recommendations off his desk and said: 'This is a waste of time! What I want is a copy of the Chilean Water Code with the word "Chile" deleted and [our

[14] I am drawing here mainly on Bauer (2004).

country's name] written instead!'[15] Chile has received countless delegations from other countries and inspired reforms in places like Morocco.

The Mexican IMT. The government of Mexico launched its IMT programme in 1992 with the aim to turn over the 3.4 million ha of public irrigation schemes over to groups of farmers (*modulos*) to be organized at the level of secondary canals. The programme was part of the process of structural adjustment under a neo-liberal model of economic opening, deregulation, reduction of the public sector and public spending, and the reconfiguration of public administration between the federal, state, and municipal governments (Pérez Prado, 2003; Rap, 2004). Primarily driven by measures of fiscal austerity, the programme was successful in transferring to users the costs of operation and maintenance of infrastructures below the main canals. Less than ten years later the programme was considered to be completed.

The Mexican model of IMT was driven by a strong internal political commitment of senior Mexican engineers and of the government whose viewpoints and interests converged with that of World Bank analysts. Water engineers saw the reform as an opportunity to regain an autonomy that had been lost when the irrigation sector was absorbed by the Ministry of Agriculture. As such it was part of a wider context of strategic political realignment and economic restructuring (Pérez Prado, 2003; Rap, 2004).

Success in transferring part of the cost is often associated with other alleged gains in irrigation and economic efficiency (Cummings and Nercessiantz, 1992). Although provisions for temporary trading of water were made such exchanges are rare, limited to *modulos* within a same scheme and require assent of the government (Kloezen, 1998). Further research found that the impact of IMT on irrigation efficiency and productivity had been neutral (Kloezen and Garcés-Restrepo, 1998; Kloezen, 2002; Rap 2004). Despite later qualifications and the discovery of 'second generation problems' (Svendsen et al., 1997; Palacio, 1999) and not withstanding the real successes achieved, the Mexican IMT has turned into a worldwide model.

River basin organization models. Although comprehensive river basin management may have started with British endeavours in the Indus and Nile river basins, and although early instances of river basin management can be found in Spain or Germany (Molle, 2006), the beginning of 'unified' river basin development is best associated with the Tennessee Valley Authority. Established by F.D. Roosevelt during the New Deal, the TVA was the first experiment in regional development that would be based on full control of the river system through a network of multi-purpose reservoirs. The TVA would not only attempt to 'fully' control the river system by a series of dams, thus providing protection from floods and producing hydropower but would also tackle poverty at the root by an ambitious range of activities, including training, agricultural extension services, soil conservation, afforestation, production of fertilizers, stimulation of local enterprises and welfare-oriented programs on education, health and sanitation.

TVA's initial ideological underpinning rested on the engineering ethos that scientific knowledge and systematic rational planning could radically change society if they could

[15] I was once reported the anecdote of a UN expert which had apparently used the "replace" function of his Word editor to reuse a policy document written for another country, but failed to change instances in footnotes, which remained with the former country name for a while.

emancipate themselves from vested interests and politics. It was also tinged with the democratic rhetoric distilled by D. Lilienthal (1944), one of the initial three co-chairmen, who stressed the danger of centralized and technocratic authoritarianism and the need for 'grassroot democracy'. Despite the gap between rhetoric and reality on the ground (Tugwell and Banfield, 1950), the TVA's democratic gloss, marketed in particular by the prophetic tone of Lilienthal's (1944) book *TVA: Democracy on the march*, was to prove a major asset of US overseas development and diplomacy, and 'a new export commodity' in Cold War politics (Ekbladh, 2002).

Based on his belief that the TVA 'demonstrated for all time the efficiency and the humanity of comprehensively planned, multi-purpose river basin development', Truman (1949) declared in his inaugural address: 'We must embark on a bold new program for making the benefits of our scientific advances and industrial progress available for the improvement and growth of underdeveloped areas.' The idea was picked up quite enthusiastically in India (with the establishment in 1948 of the Damodar Valley Corporation: Saha and Barrow, 1981), in Mexico (Barkin and King, 1970), and many other countries, including Iran, Columbia, Brazil, Egypt, Mozambique, Salvador, Sri Lanka, Surinam, Tanzania and Turkey, where schemes were planned or implemented with mixed success. Geopolitical considerations also led to the idea being floated for the Danube, the Jordan river, and the 'vast Mekong [which] can provide food and water and power on a scale to dwarf even our own TVA' (Johnson, 1965).

Most third-world elites were all too eager to accept a model that promised to spread modernism and progress to their newly independent countries, while strengthening their legitimacy through the provision of iconic and politically rewarding projects. The TVA model well befitted conventional paternalist and massive state investment in infrastructures and technology: river basin development would bring hydroelectricity, help control flood damage, bring prosperity to rural masses and thus contribute to modernization and state-building.

* In the late 1960s, France established her *Agences Financières de Bassin* (Financial Basin Agencies) in each of her five main river basins, as part of the 1964 water law. The *agences* were a response to critical water quality problems as well as instrumental in ensuring the large flows needed to cool new nuclear plants (Nicolazo, 1997). The central feature of the *Agences* is the mix of economic incentives to users and polluters to improve their practices complemented by Basin Committees which allow representation of the state, local government and users (Barraqué, 1999). They have taken over new planning responsibilities and been renamed *Agences de l'Eau* (Water Agencies) but water-quality control remains a central goal, especially after more stringent environmental standards were issued by the European Union in 1992 (Betlem, 1998).

Because of their relative success in mobilizing funds and redistributing them as subsidies to various water treatment and water quality enhancing projects, the *Agences* were soon also turned into a model which was proposed through different joint cooperative projects with countries such as Indonesia, and later Morocco, Algeria, Venezuela, Mexico, Turkey, and Brazil (MMA et al., 2001). The model was promoted by the French government which rode the post-Rio IWRM wave and supported, in 1994, the establishment of the International Network of River Basin Organizations (INBO), hosted by OiEAU, an organization mainly funded by the French water industry and the French government (Government of France, 2007).

The strength of the French model is perhaps best illustrated by its decisive influence on the European Water Framework Directive (WFD) which incorporated the principle of river basin

management and imposed it on all member countries. Another specific reason for the power of this model, however, is its embodiment of the economically orthodox user-pay and polluter-pays principles, especially after their endorsement by the environmentalist movement which saw them as a promise of reduced use and more water flowing in European rivers.

* In Australia, the Murray-Darling Basin Initiative and its implementing body, the MDB Commission, have been responsible -in their first 22 years of operation- for implementing the policies negotiated by the Ministerial Council representing the Federal government, the four governments of the states of Queensland, New South Wales, Victoria, South Australia, and the Australian Capital Territory. The MDB initiative is considered to have been very innovative in exploring and implementing processes to increase the efficiency and sustainability of water use. Early efforts included the identification of system wide salinization problems and a comprehensive package of measures to tackle the issue – including trading between government of 'salt credits'. MDBC was also a key player in water sharing agreements, the establishment of a water market, formal agreement to cap the level of water abstractions, and independent public audits of the performance of each sub-basin in adhering to cap agreements, etc (Haisman, 2004). Despite these efforts, the basin health and sustainability of production is still seriously threatened and tensions between the partners continue. Catalysed by a long-lasting serious drought, frustrated by the understandable partisanship of individual members, and concerned that the existing cooperations - whilst having many positive elements - are insufficient, in 2007 the Federal government launched a take-over bid. As water has assumed far greater significance on the national agenda, the Federal government has 'purchased' new powers to have more authority on 'whole of basin' issues considered crucial to the social and economic health of the nation (Connell, 2006).

This experience, and its undeniable successes, are of course linked to particular physical and institutional settings. Yet, the Australian federal government widely promoted the Murray-Darling model, especially in Asia, and is influential in supporting the establishment of RBOs in countries such as China, Sri Lanka and Vietnam, and also for transboundary jurisdictions such as the Mekong river basin (Pigram, 2001; Malano et al., 1999; Birch et al., 1999; Molle, 2005).

Interestingly the concept of river basin organization (RBO), and its necessity for water management, is being promoted despite the huge variation in such organizations: although they come under the same term and they all deal with river basins, the three RBO models reviewed above differ widely. The TVA model represented a stage of state-led massive infrastructural development (and was actually never replicated in the US, notably because of power conflicts with both federal and state level agencies). The French model was a response to water quality degradation and needs for nuclear plants, and an attempt to internalize costs. The Murray-Darling Commission was about water sharing and –later- management of environmental degradation and increasing water scarcity. Although they have distinct purposes these models sometimes find themselves in competition and are all potential sources of 'lessons learned' for varied contexts.

According to a World Bank report the TVA 'has perhaps the best name recognition in the business of river basin management. It is considered by many outside the United States as the

model for river basin development and management' (Miller and Reidinger, 1998)[16] and is still presented by USAID (2007c) as an uncontroversial and resounding success, despite the nuances that would be warranted by a literature review on the TVA. Strikingly, although the TVA was a source of inspiration for western-driven development plans of the Mekong in the 1950s and 1960s, it was still associated with development plans in the late 1980s at a time a cascade of dam on the main stem of the river was becoming a discredited option. The Murray River Basin Commission has been promoted as a case of 'a world's best practice model in basin management, particularly across jurisdictional borders' (Linn and Bailey, 2002). Interestingly, too, the respective weaknesses or specificities of the models tend to be glossed over. For example the continued environmental degradation in the Murray Darling basin (Connell, 2006; Miller and Hirsch, 2002) or the heated debates around the *Agence de l'Ea*u (Ref) seldom makes the headlines in international circles.

Models prove to be quite malleable when put into practice. This is shown, for example, by the various incarnations of the TVA model which have little in common with their forbearer. Likewise the Turkish model of IMT was inspired by the Mexican model but fell short of establishing autonomous water user groups. This is little wonder because models are by nature decontextualized and their application in specific settings can only lead to utter diversity; but this is also a testimony of the pre-eminence of political and other motives at the time of adoption of the model, even when the context and modalities of its implementation are quite distinct from the original reference. More positively, 'selective borrowing' can also be construed as steps on a common trajectory that gradually institutionalizes a degree of decentralization in resource management and democratization of decision-making (Meublat and Lelourd, 2001).

Models befit the practice of development as the provision of adequate expert knowledge, technology and targeted infrastructure investment that are traditionally associated with the engineering world and state visions of social engineering (Long and van der Ploeg, 1989; Arce and Long, 2000; Scott, 1998; Mollinga and Bolding, 2005), and that prop the social legitimacy of these professions[17] as well as of the state. They foster top-down bureaucratic approaches that generally struggle to elicit genuine participation of stakeholders (Miller and Hirsch, 2002); and they allow the replication of capital intensive projects that meet the interests of a powerful coalition of construction firms, banks, politicians and bureaucrats (Molle and Renwick, 2005). More fundamentally they keep politics at bay by promoting ahistorical or transhistorical recipes.

Explaining why some models succeed or fail lies outside the scope of this article. Yet, it is interesting to note that some models fade away rapidly because they are less convincing or credible and were not supported by a critical mass of publication that could generate a

[16] As noted byMiller and Hirsch (2002), this publication followed a World Bank-sponsored seminar "River Basin Management: Tennessee Valley Authority and the Murray-Darling Basin" on February 13, 1997 held in Washington, D.C., USA, and was written with the aim of summarising "those aspects of TVA - particularly those related to water resources management - that could serve as a useful reference to Bank staff and client countries in evaluating the various institutional arrangements, operating programs, technological bases, and other conditions conducive to comprehensive river basin development" (Miller and Reidinger, 1998).

[17] See for example the prestige attached to the "ingeniero" in Latin America or the "mouhandis" in the Arab world.

snowballing effect. Turkey's IMT was directly inspired from Mexico (decision makers made several trips to Mexico) and for a short time was believed to become a new showcase; so was Andhra Pradesh with its 'big bang reform' (Mooij, 2003; Nikku, 2006). Others travel far and long but at the cost of a selective presentation of experience: the NIA (National Irrigation Administration) reform in the Philippines, for example, was praised with regard to transfer of small schemes while the much less successful experience with large scale public schemes was overlooked (Mollinga and Bolding, 2005; Oorthuizen, 2003). This takes us to examining more in detail how these concepts spread and adapt or mutate.

5. The epidemiology of hegemonic concepts

How nirvana concepts, narratives and models play out together is a difficult issue: there are validating linkages between these three categories of concepts and self-reinforcing implicit causalities between concepts of a same category. For example IWRM (a nirvana concept) provides justification for river basin management (to be linked to a specific model) that calls for demand management and pricing policies anchored in several storylines (real prices bring efficiency, etc). Policies, 'Technical Assistance' (TA) grants, and development projects are the concrete manifestation of these concepts turned into action.

An interesting issue that has so far been little addressed is the social and political life of these concepts. In other words how do these concepts emerge, spread, influence policy, practice and intellectual production; how do they become resilient and sometimes hegemonic, adapt/mutate or just vanish. Conceptual objects do not, of course emerge from a vacuum, and can only be understood as social and political constructs shaped by the interplay of institutions, networks, interests, and visions (Mosse, 2004). A few very preliminary reflections can be drawn from the examples given above. Although the three types of concepts are influential at different levels we examine here 1) how they get reproduced and spread, 2) the incentives to actors involved in that process, 3) the 'paradigm maintenance' sometimes deemed necessary to protect them.

The snowballing effect

Snowballing is the process by which a concept is gradually taken up by a growing number of dispersed actors, projected in professional events, circulated in academic literature, and gradually established as a consensual and successful icon. Snowballing is similar to launching a satellite in orbit. It may pursue its course by itself after some time but it does need a big initial push. If the push is not sufficient the concept might not acquire enough momentum and just get stuck, just like the satellite might fall. If it is too strong, it might arouse stiff opposition and be discredited, as the satellite might go astray in the infinite. Success means that the model, or the concept, is self sustaining because enough people have been convinced and are ready to reproduce it, thus minimizing the risk to be criticized and in some cases maximizing rewards (see below).

Such informal groups of actors that take up and further propagate a concept come close to what Haas (1992) has termed epistemic communities[18], that is, 'a network of professionals

[18] Rap (2006) uses the concept of policy network to designate the "network of active supporters enrolled in the proliferation of a policy".

with recognized expertise and competence in a particular domain and an authoritative claim to policy-relevant knowledge within that domain or issue-area'. An epistemic community may consist of academics, decision-makers and other professionals from different disciplines who share a set of normative and principled beliefs, as well as causal beliefs and cause-and-effect understandings. Epistemic communities typically respond to a demand for expert opinion in the face of increasingly complex societal problems. Members do not need to meet frequently or in a formal manner and are, rather, linked by their consensual beliefs and knowledge references, and by their objective to influence policy.[19]

Epistemic communities often contribute to establishing institutions which will carry over the message and develop it. Actors around the IMT paradigm and models, for example, proposed the setting up of the INPIM network (Rap, 2006). Those involved with promoting IWRM supported the creation of the Global Water Partnership, while promoters of river basin management supported the establishment of the International Network of basin Organizations (INBO); the GWP and INBO have also established regional branches. All these themes (IWRM, basin management, IMT) have been supported by many donors, and have given way to innumerable MSc programmes, training activities, field trips, international conferences, and publications.

Development agencies like Sida, GTZ, USAID, AusAID or DFID, and UN agencies, have contributed to these dynamics but none of them comes close to the role and influence of development banks, principally The World Bank. The Bank has always maintained a keen interest in the dissemination of ideas and has even recently morphed into a 'knowledge bank', claiming to be both a neutral gatekeeper and a major producer of knowledge (Mehta, 2001). Between 1997 and 2002, $283 million was spent on reorganizing the Bank in line with its intent to become a knowledge institution. Far more was spent on actual activities such as training and reports. The Bank's research is widely disseminated and highly respected among many important audiences.[20] A study commissioned by the Swedish government in 2000 concluded that 'the World Bank continues to be dominant as the main purveyor of development ideas' (Bretton Woods Project, 2007).

Bank publication power is unparalleled: beyond its own working papers, reports, briefs and scientific journal (e.g. the World Bank Observer), it also publishes books, frequently in association with other publishers, and supports associated journals (e.g. World Development).

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[19] According to Haas (1992): "The epistemic communities approach focuses on this process through which consensus is reached within a given domain of expertise and through which the consensual knowledge is diffused to and carried forward by other actors. Its primary concern is the political influence that an epistemic community can have on collective policymaking, rather the correctness of the advice given."

[20] According to the Bretton Woods Project (2007), the Bank's website reaches 700,000 users a month. A 1999 World Bank survey of 271 high-level policymakers in 36 developing and transition countries found that of its respondents 84 percent use Bank analytical reports; the Bank was rated the most important information source of a list of domestic and international organisations; the majority considered the Bank's work "technically sound, relevant and objective". According to a Government official from Brazil responding a survey on Bank's knowledge sharing "The Bank is **the** institution which we address when we need some kind of information or advice. Don't underestimate this fact. If you really need an expert on a certain issue related to development, the World Bank is where you go" (World Bank, 2003).

Bank researchers and their consultants produced nearly 4,000 papers, books, and reports between 1998 and 2005 (Banerjee et al., 2006). This is amplified by the organization of, or support to, many national and international events. The literature emanating from the Bank is highly self-referential and tends to reproduce the conclusions of (early) key papers which are repeatedly cited, disseminated, and thus passed on to the outside academia. The strength of this process has been illustrated by the example of water markets in Chile, as discussed above. A recent review of Bank research during the 1998 – 2005 period issued 'criticisms of the way that this research was used to proselytize on behalf of Bank policy, often without taking a balanced view of the evidence, and without expressing appropriate scepticism. Internal research that was favourable to Bank positions was given great prominence, and unfavourable research ignored' (Banerjee et al., 2006).

As the size of the snowball gets bigger, dissent tends to be mechanically suppressed, 1) first out of sheer disproportion between the promotion of, and opposition to, the storyline; 2) second because the risk of professional marginalization increases; and 3) third because the concept is positively internalized and considered as a universal 'best practice'; it may thus become hegemonic, that is taken for granted and accepted without being questioned (Gramsci). As illustrated by a World Bank official asked why he thought the Mexican case to be a success, 'nobody denies it is a success' (cited in Rap, 2006).

Incentive to involved actors

The concept and adoption of models brings several benefits to the parties involved, including policy-makers and managers in recipient countries, experts and academics, as well as development banks. This is apparent, for example, in the RBO models: beyond the genuine belief that success could be replicated and development fostered, Truman's bid to export the TVA model was also predicated upon the power of the democratic rhetoric embedded in the model, serving geopolitical interests in the fight against communism[21], and the interest of engineering and construction companies that could benefit from implementing high-tech dams in countries which did not have the technical capacity to construct them.[22] Similar interests in both promoting national industrial and consultancy firms, and expanding political/symbolic influence are also salient in the support by France and Australia of their respective models.

For national elites, models are first of all a possible (at least partial) solution to significant water management problems. Secondly, they are a means to respond to the modernization drive of bilateral and multilateral donors and to attract funds from them (from countries eager to spread their model, or development banks eager to see their money out). Third, because models supposedly bring legitimacy and embody a promise of success (Mollinga and Bolding, 2005) they are mobilized in bureaucratic struggles in order to justify/impose –for example- a particular reconfiguration of the bureaucracy or decentralization policies. In Indonesia the French model served to justify the levy of a pollution tax; in Brazil the federal National Water and Energy Agency promoted the French model in anticipation of a 'fiscal drought' as a means to ensure a separate budget, independent of the state (Meublat and

[21] "The TVA was a weapon which, if properly employed, might outbid all the social ruthlessness of the communists for the support of the peoples of Asia" (Schlesinger, 1970; cited in Ekbladh, 2002).

[22] Saha and Barrow (1981) refer to the "huge profits made by overseas construction and consultancy firms" in most cases.

Lelourd, 2001). Although IWRM has been largely hijacked by state bureaucracies the concept has also –internally- been appropriated in different ways. In Vietnam and in Thailand the new Ministries of Natural Resources and Environment saw the intermediate scale of the river basin as their legitimate level of action, but also as a window of opportunity for obtaining some power and expanded role within the pre-existing administrative structure dominated by the Ministry of Agriculture and Rural Development (in Vietnam) or the Royal Irrigation Department (in Thailand). The concept of integrated river basin management and RBO introduced, at the instigation of the ADB, as pillars of IWRM became sites and objects of internal struggle in the context of wider bureaucratic change (Molle and Hoanh, 2007).

National policy-makers also have incentives to rely on sanctioned concepts. Straightforward advantages include travels to international conferences, joint publications, and other fringe benefits but also the professional reputation and derived career enhancements that may come with being involved in a success story or a nirvana concept. Many national representatives of GWP were given the opportunity to acquire regional or international status; Rap (2006) showed that several Mexican water officials associated with the IMT reform were able to project themselves as international consultants, virtually 'selling' the model. The Mexican government bureaucracy controlled the release of public information on the progress and success of the transfer and orchestrated mass media campaigns to draw support to the reform and satisfy donors.

Over time, the trajectory of the policy model mobilised and united these groups into an epistemic community of transnational policy-makers. Their activities overlapped, paths crossed, and interrelations multiplied through multilateral institutions, conferences, professional associations, and so forth. Through these influences they increasingly shared and disseminated a number of cultural and ideological understandings, values, and practices that underpin the success of the policy model. This self-reinforcing congruence shaped the production of the policy model and its acceptance and fashionability among peer communities and policy elites in relevant political, financial, and hydraulic institutions around the world (Rap, 2006).

Models are also the epitome of the rational and reductionist model of policy and planning, anchored in expert knowledge and replicability of solutions. Therefore they are attractive 'blueprints' for development banks or agencies which need to save on transaction costs and avoid lengthy, costly, and above all confusing in-depth analyses of each specific situation: fathoming the complexity of a particular development context is likely to lead to confused and conflicting views, which instils doubt, hinders action, and de-legitimizes the application of models that, on the contrary, are based on stable, simplified, and depoliticized narratives. Blueprints and models help preparing and selling projects and are testimony that 'development can work'. This importance of models explains why the banks are also keen to intervene when financial or other difficulties threaten to undermine their position in the course of action (as shown by the case of Andhra Pradesh in 2001: Mooij, 2003).

Several strong incentives to staff also lead to ideological orthodoxy and adherence to narratives and models. Based on interviews of several World Bank staff and partners, Broad (2006) singled out several mutually-reinforcing structures, including 'a series of incentives: increasing an individual's chances to be hired, to advance one's career, to be published, to be promoted by the Bank's external affairs department, and, in general, to be assessed positively'. The association of hefty salaries and temporary contracts acts as 'golden

handcuffs' and tend to generate conformity, limiting 'dissent by increasing the "opportunity costs" of any dissidence' (Broad, 2006) or even by direct censorship.[23] This particularly applies to national staff members contracted by the Bank, who are understandably not very keen to jeopardize their gains in social status and salary for the sake of a mundane doctrinal disagreement.[24] Just as operations people are rewarded for giving out loans (Meltzer, 2000; Easterly, 2001), Bank researchers are rewarded for bolstering the economic paradigm and ideological underpinning of the Bank. This may sometimes amount to 'paradigm maintenance'.

Paradigm maintenance

Just like for the formation of epistemic communities, the promotion of narratives and models is rarely the result of a strategic or 'Machiavellian' conspiracy. Rather it is the natural emanation of mainstream international institutions which are in search of a) theoretical anchors justifying their practices, b) 'something that works', in order to reduce transactions costs of dealing with the baffling complexity of the world and development problems. Yet, as social constructs, these concepts and models are rarely neutral and embody causal assumptions about how societies work and normative beliefs about how they should work, as well as conceptions about international relations, governance, or how to exercise power. Unsurprisingly, economic and political assumptions are deeply ideological, even if this is not always apparent.

The framings of poverty, economic growth, governance and markets which underpins the models and best practices promoted by the Bank inevitably end up being belied by particular events or instances. In such a case the narrative may be in need of active protection; so that the snowball doesn't melt down. Broad (2006), for example, documented how the paradigm linking openness to foreign trade and investment and faster growth had to be internally protected by discarding contrary evidence and even massaging executive summaries so that the Bank ideological axiomatics (in that case, the Washington Consensus) would remain unsullied. More specifically, Easterly (2001) has vividly described how the narrative of the *financing gap*, that first links growth to capital investment and then justifies foreign aid by the lack of national savings for achieving necessary investments (hence the need to 'fill the gap'),

[23] Senior Bank researcher David Ellerman complained of "bureaucratic conformity", with public relations staff acting as "thought police to the black sheep in the organization who are not 'on message'" (Bretton Woods Project, 2007). See direct cases of censorship and the resignation of several editors of annual World Development Reports: DEVELOP.

[24] As realistically admitted by a staff at headquarters "I have two sons studying in US universities and that costs a lot; I am not going to rock the boat". For a more stringent critique see Goldman (2005): "A consultant for the [World] Bank in Addis makes the equivalent of thirty times what an equally qualified economist makes... The World Bank successfully cultivated transnational professional-class actors and networks that not only meet the Bank's needs but have their own interests and roles to play, such as serving national political and corporate agendas."

has survived during 50 years (and is still active), despite renewed academic refutation.[25] A similar example of 'the art of paradigm maintenance' related to the interpretation of the East-Asian economic miracle has been analysed by Wade (1996).

The pre-eminence of ideological bias sometimes leads to situations where arguments are at odd with reality. One example is the insistence of international organizations on downsizing water bureaucracies and internalizing costs of activities subsidized by the state. Establishing water charges is often predicated on the impossibility for the government to continue shouldering such costs: the argument of the 'fiscal drain'. Irrespective of the general soundness of the argument it is striking to see the fiscal drain rhetoric used in contexts where it is unwarranted. While Sur and Umali-Deininger (2003) stress than in 1997/98, canal irrigation subsidies were equivalent to 2.6% of the fiscal deficit in Karnataka and 7% of the fiscal deficit in Andhra Pradesh, this only amounts to 0.1 and 0.3% of respective state expenditures, a limited subsidy if redistribution to farming populations is considered a state policy. Likewise in Thailand the cost-sharing policies proposed by Halcrow & Partners and ARCADIS/Euroconsult (2001) because of the 'huge drain on the national budget' implied by irrigation subsidies represent 0.37% of the value of Thai agricultural exports and 0.27% of Thai government expenditures not considering costs of collection). In Jordan the 'fiscal drain' argument commonly raised to justify increased cost-recovery is also hardly convincing since the present O&M subsidy to the Jordan Valley Authority is worth less than 0.1 percent of state expenditures at US$3.7 billion (Venot and Molle, 2007). This does not mean that such measures are unsound but it is striking to see how they can be moved by an ideology of 'real costs' propelled by experts often coming from countries whose aggregated yearly subsidies to agriculture are infamously higher than the total revenue of Africa.

Another example of paradigm maintenance is provided by the question of what types of investments are needed for African agriculture, notably with regard to irrigation. The irrigation potential area established by a report commissioned by the British 'Commission for Africa' was judged too low by political and other interests in want of a higher target (and was subsequently doubled). Another study has been commissioned by several international organizations to draw lessons from agricultural water management investments in Sub-Saharan Africa. The draft report, that promoted investments in rain-fed agriculture and micro-technology, was later taken up by two experts who modified it into justifying more of the conventional irrigation investments. Establishing the link between poverty and water resource development is presently a challenge of major importance for justifying further investments and this has spurred a hefty literature in recent years.

Svendsen (1993) also noted that the principle of eliciting water conservation through pricing 'applies only when water charges are levied volumetrically-an exceedingly rare situation in the developing world-though the argument is frequently invoked as though it applies to all allocative situations.' In practice the justifications given to support the borrowing of a model,

[25] The model is propped on a work written in 1946 by Domar (and later repudiated by its own creator) and was given salience in Rostow's theory of economic takeoff. When the dogma was criticized in the 1980s it was modified as to state that "although physical capital accumulation may be considered a necessary condition of development, it has not proved sufficient". This is probably the clearest example of how a false narrative debunked by economic science can nevertheless endure over half a century when it serves powerful interests by providing ad hoc justifications. See more details in Easterley (2001).

the design of a particular project, or the establishment of a particular policy, often reveal shifting contradictions and flaws that are telling indications of ideological bias and other concealed motivations.

6. Implications for policy-making and conclusions

Regardless of how these global concepts and icons emerge and are disseminated, they have by nature a number of consequences on development interventions and on policy formulation and implementation. Not all these implications are negative. Sanctioned concepts and models outline a rather stable and consensual common ground for water experts or officials worldwide to meet, exchange, discuss and learn from each other by putting their own context into perspective (Bauer, 2004). For van der Zaag (2005) IWRM concepts have 'inspired a new generation of water managers and researchers to think out of the box and act creatively… [and] brought mutual respect, understanding and cooperation among water professionals in Southern Africa.' Beyond water professionals, and perhaps more importantly, IWRM –as a nirvana, or horizon, concept- has also allowed other constituencies, interest groups and NGOs to use the concept to frame and disseminate their visions. Sanctioned concepts allow the diffusion of general principles and the identification of common problems and solutions at a generic level; they offer support/expertise and foster national processes of reflection on water policies; they sometimes encourage dialogues between segments of the administration or ministries that share responsibilities on water issues but do not coordinate their actions.

The downside of these positive aspects is the conception of adapted knowledge as a 'best practice' that tends to become normative, but value-laden 'truths' are insensitive to context, and override endogenous solutions. Knowledge is conceived of as neutral information that can be provided like any other commodity if it is properly organized, archived, and transmitted. There is a strong tension between the World Bank's messages that it wants to avoid blueprint approaches, and its many documents and indicators which claim to measure[26] 'the right policies' (Bretton Woods Project, 2007). Likewise, on the one hand, ADB discards the one-size-fits-all approach and acknowledges that 'there is no standard approach that fits all the needs' (Arriens, 2004) but, on the other, proposes a quite unambiguous model of water regime, whereby 'modern' water legislations are enacted, the state is confined to a regulatory role decentralized down to RBOs, while irrigation and urban waters 'services' are assured by providers and utilities, duly paid by their clients in order to ensure full cost-recovery (Arriens, 2004). Changes are evaluated based on the formal existence of particular administrative devices or institutions, without looking too much at contents and processes.[27]

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[26] Saleth and Dinar (2000b), for example, review water reform processes in 11 countries and extract for each of them what they consider as "best practices," or "healthy practices that can strengthen the institutional basis for better water allocation, financing, and management;" these include IMT, the formation of RBOs, water permit registry, market-based water allocation, privatization of urban water supply, water law, etc. These practices are presented as elements whose achievement is a measure of success and modernism, but their relevance (or lack thereof) to a particular context is not discussed.

[27] A graphic example of this is provided by a "progress report" on water sector reforms in Asia (Mosley, 2004), which establishes a list of 41 "policy elements" and estimates to which degree different countries have achieved them. These elements include "legislation adopted," "private sector investments," "cost recovery," "river basins/aquifer organization," "rights and responsibilities of stakeholders," etc.

Irrespective of the merits or limitations of such a water regime, this approach tends to ‘freeze’ the range of arrangements and site-specific mix of communities, state and private management that are precisely what needs to be defined endogenously. An indirect effect of the snowballing effect is to crowd out alternative narratives or new evidence raised by research. The desire of all the parties involved to show the consistency of interventions with their initial theoretical model also inhibits accurate evaluation and error detection, and reduces the ability of managers to learn from past mistakes (Mosse, 2004; Rondinelli, 1982).

Insensitivity to context is probably a major source of failure. Boelens and Zwarteveen (2005), resume for example, show how prevailing conceptions of water rights modelled on neo-liberal economics thinking are at odds with the socio-historical reality of communal water management. The ‘single-mindedness and selectivity in presenting models and strategies’ and the ‘lack of understanding and adaptation to the needs and concerns of local circumstances’ were repeatedly identified by Bank country partners as main weaknesses of the Bank's knowledge production (World Bank, 2003). As a Brazilian official had it: ‘If I’m in Brazil, living with Brazilian reality, implementing projects, and I observe that there’s not a correct vision of the situation, then I begin to question this best practice. Is it really true that this “best practice” is the exact, correct, and real vision?’ (World Bank, 2003). Many analysts observe that the water sector appears to be largely littered with well-intentioned and rationalistic reforms that have failed to fully appraise the context of their implementation (Sampath, 1992; Pigram, 2001; Shah et al., 2001). ‘Ignorance of ignorance, uncertainties, and of difficulties’ is the prelude of a ‘long *voyage of discovery* in the most varied domains, from technology to politics’ (Hirschman, 1967).

Another implicit effect of models and 'best practices' mentioned earlier is their ideological outreach. As illustrated by the example of the 'financial gap' flawed narratives may survive decades when they serve powerful interests. Discourse analysis is thus an important tool for unpacking the articulation of concepts that underpin practice, not only for the sake of exploring the underbelly of the beast, or engaging in discursive struggles, but also to identify textual mismatches that may later have severe implications on outcomes (Cornwall and Brock, 2005). Although one’s view of the world and reality is admittedly reflected in language, discourse analysis also needs to show how people's discourses are shaping a particular world (Hajer and Versteeg, 2005) and are as much constitutive as reflective (Throgmorton, 2003). Internalised hegemonic conceptual views of poverty, water scarcity or regulation through economic tools do translate into a particular type of action and mode of organizing societies.

Since rhetoric and the creation and use of words and concepts are constitutive of the way individuals and groups interact within societies it can be safely inferred that they are here to stay. This view is corroborated by the analysis given in this article of all the psychological, professional, social, political and ideological incentives to the continuing emergence of such concepts. Some might be tempted to jump to the additional conclusion that since discursive power is not unrelated to institutional and political power, these concepts are merely tools or weapons serving particular interests; and that what matters is their legitimacy (and how this is manufactured), irrespective of their content or substance.

Such an argument for total relativity leaves little room for ‘better science’, ‘more informed decision-making processes’, and for an active reworking and re-appropriation of concepts. One option for practitioners or, exemplified in the first section, is to consider nirvana concepts as boundary objects and to engage with them, reworking and re-appropriate meanings in order to use their rhetorical power to create political space and to implement changes or instil ideas

that they wants to defend. Despite the impression that hegemonic concepts are pervasive and somehow inescapable it is also apparent that some models or narratives fade away for failing to establish themselves. Voluntary efforts to strengthen or keep afloat embattled doctrinaire narratives (with some cases of paradigm maintenance) also suggest that they are not immune to debate.

If models and nirvana concepts work to mobilize their promoters and tend to reflect dominant interests and the distribution of power in society, they also serve to mobilize protests and to rally those who feel they stand to lose in the conceptual game. Instances of IMT introduced in Sri Lanka or participatory irrigation management (PIM) in Pakistan, attempts to establish irrigation water pricing in Thailand or privatization and tradable water rights or water pricing in Sri Lanka, Bolivia, Ecuador and Peru have been faced with stiff resistance. Sometimes counter-hegemonic discourses and concepts may also arise.

Roe (1991) doubts that narratives or blueprints will ever be debunked by contrary evidence and argues that failed narratives should be replaced by 'better narratives' or 'better truths'. Yet, narratives and models are liable to investigation, can be belied by empirical evidence and are in other words falsifiable. Even if debates are never fully exhausted, the principle of constantly reopening debates, exposing shortcomings, discussing concepts, engaging opposed views, deconstructing generalisations, in other words tirelessly promoting openness, scrutiny, and accountability, remain the central remedies to debate closure and to the neutralization or exclusion of particular alternatives, viewpoints, or social groups.

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