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The Commodification of Water in the Arid and Semi-Arid Parts of South Africa: A Preliminary Historical Exploration

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Introduction: commodification

Since the nineteenth century, one of the major Marxist critiques of capitalism has related to the exploitation of one of the basic needs of humankind – the demand for scarce goods and services. Given the right type of entrepreneurial environment, an everyday object or activity can easily be turned into a means of generating capital. Ultimately this leads to what is described as "exploitation" and the demise of quality of life. How subtle the process can in fact be, was outlined by Horkheimer and Adorno in the 1940s.[1] Commodification, which can be defined as the process in which anything that has a use and/or an exchange value, as well as a message of signification,[2] becomes an intrinsic part of a cultural condition that has manifested itself in the era of modern capitalism.[3]

Some examples of commodification can shed light on the problematic nature of the phenomenon. Advanced research at the Massachusetts Institute of Technology (MIT) has confirmed the primary assumption that a price tag ultimately exists for everything on the internet.[4] Despite attempts at

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1. M. Horkheimer and T. Adorno, *Dialektik der Aufklärung philosophische Fragmente* (1944. Reprint of the 1969 edition, Fischer Verlag, Frankfurt am Main, 2003), pp 128-177.
2. A. Opel, "Constructing Purity: Bottled Water and the Commodification of Nature", *Journal of American Culture,* 22, 4, Winter 1999, p 69.
3. Commodification was introduced into the academic discussion milieu by Gosta Esping-Anderson, a Swedish academic, in his work, *Worlds of Welfare Capitalism* (1990). See P. Bond, "An Answer to Marketization: Decommodification and the Assertion to Rights to Essential Services", *Multinational Monitor*, 23, 7/8, July/August 2002, p 14.
4. G.P. Robinson, "A Mythic Perspective of Commodification on the World Wide Web", *First Monday,* 7, 3, March 2002 at http://www.firstmonday.dk/issues/issue73/robinson/. Also see OpenCourseWare, "Mellon, Hewlett Foundations Grant $11M to Launch Free MIT Course Material on Web", *MIT News,* 18 June 2001, at http://mit.edu/newsoffice/nr/2001/ocwfund.html (accessed 30 March 2004).

diminishing material value to matters of intellectual endeavour, the chances of decommodifying anything that can be turned into ready capital, are slim. Even the discipline of History has become a subject of commodification when we take note of the current popularity of what is termed heritage tourism. In the South African context, heritage tourism studies has been one of the growing fields of the academic teaching of History as a discipline at the tertiary level.

In recent years, research into the history of commodification has yielded some interesting results.[5] Apart from an increasing awareness of the history of specific commodification processes, historians have started identifying the goods that ultimately appear to be in great demand. For example, the introduction of tea, coffee and cacao to Western Europe,[6] and the commercialisation of the *khat* industry in early twentieth century Ethiopia,[7] are only a few of the fields explored thus far. The research suggests that commodification, especially of substances that cause dependencies, present major socio-economic problems in contemporary society.[8]

The question that can now be posed, is: What happens when a substance, which has been traditionally regarded as a basic resource, becomes a commodity? One example hereof is water. The commodification of water is currently a major issue of debate amongst researchers in the water-management and economic sciences.[9] On the one hand, there are those who maintain that water is a *natural resource* and should be available to the public at the cheapest

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5. An early work in which some groundbreaking research appeared, is J. Brewer and R. Porter (eds.), *Consumption and the World of Goods* (Routledge, London and New York, 1993).
6. R.W. Jamieson, "The Essence of Commodification: Caffeine Dependencies in the Early Modern World", *Journal of Social History*, Winter 2001, at http://www.findarticles.com/cf_dls/m2005/2_35/82066731/p2/article.jhtml?term; J.E. van Someren Brand, *De Groote Cultures der Wereld haar Geschiedenis, Teelt en nuttige Toepassing* (Elsevier, Amsterdam, 1906), pp I-VIII, 120-99, 278-326.
7. E.B. Gebissa, "Consumption, Contraband and Commodification: A History of Khat in Harerge, Ethiopia, c 1930-1991." PhD thesis, Michigan State University, 1997.
8. C. Raubenheimer, "SA is Afrika se Dagga-koning: al Knou Droogte die Oes, is Land Grootste Produsent, sê VN", *Beeld,* 4 Maart 2004, at http://152.111.1.251/argief/berigte/beeld/2004/03/04/B2/03/01.html
9. M. Bradlow, "Water Incorporated: the Commodification of the World's Water", *Earth Island Journal*, 5 March 2002 at http://www.globalpolicy.org/globaliz/bspecial/2002/0305water.htm; T. Kluge, "Wasser ist Kultur", *Die Zeit,* 13, 2003, at http://www.zeit.de/2003/13/ST-Wasser; P. Bond, "An Answer to Marketization: Decommodification and the Assertion to Rights to Essential Services", *Multinational Monitor*, 23, 7/8, July/August 2002, pp 14-17; A. Versluis, "The Great Lakes as Commodity. Water: Public Good or Private Gain", *Counterpunch,* 19 January 2004, at http://www. counterpunch.org/verluis01192004.html.

possible rate. If possible, it should even be free.[10] On the other hand, there are those who maintain that water, particularly in the arid areas of the world, is a scarce resource, in fact a *commodity,* and it should be valued in order to ensure that it is used sparingly.[11] One of the arguments leads that consequently, the best way in which to incur water-savings, is to make consumers pay for it as they do for petrol at the filling station, or for electricity at the local authority.[12]

Internationally a number of concerns are beginning to emerge. It is said that the International Monetary Fund and the World Bank are working in the direction of making water a commodity. Ultimately, it will be sold at ever-increasing prices. More importantly, it means the control over water-supplies could be removed from the peoples who have, as consumers, the most direct interest. Some experts even argue that the privatisation of water could become a form of terrorism – especially in poorer countries where the government is not adequately well-positioned always to assert control. They maintain that water-services are introduced under the auspices of social and ecological interest. Later it only leads to entrepreneurial control over the sources of water. Currently it is argued that major international water-companies, such as Vivendi, Suez and RWE, should be drawn into public debates on water-supplies. These companies should then be held to be socially responsible. They should furthermore cooperate and ensure that their work is conducted according to transparent rules and agreements, concluded beforehand.[13]

In the case of South Africa, there is a distinct reason for concern. Since the second half of the 1990s, the price of water has increased consistently. International trends suggest that the price of water is higher than in many other countries of the world. Furthermore, the increases in tariffs appear to be rising much faster than in any other part of the world.[14] The average consumer in the

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10. J. Jeter, "South Africa's Driest Season", *Mother Jones,* 27, 6, November-December 2002, Ebsco Host Web. Also see P. Bond, G. Ruiters and R. Stein, "Droughts and Floods: Water Rises and Values in the Time of Cholera" *in* P. Bond, *Unsustainable South Africa Environment, Development and Social Protest* (University of Natal Press, Pietermaritzburg, 2002), pp 255-300.
11. See R. Bate and R. Tren, *The Cost of Free Water The Global Problem of Water Misallocation and the Case of South Africa* (The Free Market Foundation, Johannesburg, 2002).
12. D.R. Ward, *Water Wars Drought, Flood, Folly and the Politics of Thirst* (Riverhead Books, New York, 2003), pp 223-224.
13. T. Kluge, "Wasser ist Kultur", *Die Zeit,* 13, 2003, at http:// www.zeit.de/2003/13/ST-Wasser.
14. S. Valentine, "SA se Waterpryse Styg Meeste", *Beeld,* 27 Oktober 1998, at http://152.111.1.251/argief/berigte/beeld/1998/10/27/15/11.html; R. van Niekerk, "Suid-Afrikaanse Waterpryse Styg Vinniger as Inflasie", *Sake Beeld,* 13 Augustus 2004, p 2 at http://152.111.1.251/argief/berigte/beeld/2004/08/13/F1/02/04.html.

country thus has a vested interest in pricing structures that are introduced. Although the authorities tend to steer away from the argument, it is increasingly apparent that water could well, in the not too distant future, become intensely commodified, largely as a result of the fact that it is a scarce natural resource in the arid and semi-arid regions of Southern Africa.[15]

Historical perspectives

In an attempt to test the viability of commodification as a practical option to secure the careful use of a scarce resource, consideration was given to looking at the manner in which water had been used in the arid and semi-arid areas of Southern Africa since former times. Primarily the central and western region of Southern Africa was considered as being of significance for this investigation. Note was also taken of the Klein-Karoo in the Eastern Cape. The objective was to try and potentially locate some of the first areas of human activity in which water was commodified. This study is a preliminary and exploratory investigation for a larger project dealing with a cultural history of water. For the purposes of this discussion, the focus is ostensibly on secondary sources and published source materials.

In order to maintain a sense of continuity, it was deemed necessary to make the first classifications in terms of human industry as it has evolved in Southern Africa over the past fourteen thousand years. Starting with the Stone Age cultures in which hunting, gathering and foraging were the order of the day, there was a transition to Iron Age culture which coincides with the introduction of pastoral and agricultural industry in the region, some two thousand years ago.[16] The third phase of development is directly related to changes that started taking place in Western Europe from the sixteenth century. New modes of trade and production prevailed in the Dutch renaissance-era of the seventeenth century. It led to the establishment of a refreshment station by the *Vereenigde*

15. The terms "Southern Africa" and "South Africa" are used interchangeably. In view of the fact that large parts of the semi-arid and arid regions of the subcontinent are situated outside the borders of modern South Africa, it is necessary, especially for the earlier history, to refer to Southern Africa.

16. It is accepted that both pastoralism and agriculture in Africa dates back to about 7 000 to 8 000 years before the present. In the case of Southern Africa, livestock was introduced about 2 000 years ago. See J.L. Newman, *The Peopling of Africa A Geographic Interpretation* (Yale University Press, New Haven and London, 1995), pp 40-49; J.S. Solway and R.B. Lee, "Foragers, Genuine or Spurious?: Situating the Kalahari San in History", *Current Anthropology,* 31, 2, April 1990, p 111; O. Hanotte, D.G. Bradley, J.W. Ochieng, Y. Verjee, E.W. Hill and J.E.O. Rege, "African Pastoralism: Genetic Imprints of Origins and Migrations", *Science,* 296, 5566, 12 April 2002, p 339.

Oost-Indische Compagnie (VOIC) at the Cape. In the eighteenth century, similarly, a more compounded process of change followed as a result of industrial developments in Britain, as from the 1740s. Before the end of the century, the British were in control of the Cape of Good Hope. These developments had a direct bearing on patterns of water-consumption in Southern Africa. The Dutch needed fresh produce from the local farmers for the ships passing the Cape. From the nineteenth century, the British required raw materials and markets to sustain the processes of industrial activity taking place in the United Kingdom. Along with the British came the interaction with overseas markets for export and import. As primary and secondary industries in the farming, mining and manufacturing sectors started to gain a foothold, more advanced technologies were introduced to procure sufficient water-supplies. By the twentieth century, sophisticated hydrological technology was the order of the day in many parts of the arid and semi-arid regions of South Africa. As new management strategies were introduced, the indications were that ultimately consumers would simply have to pay more for water in order to ensure that it would be used carefully. Arguments of this nature seem to fall in the favour of the proponents of commodification.

In this discussion the objective is to give a broad overview of the history of human water-consumption in the region, with particular reference to commodification. A preliminary investigation of the available historiography on water suggests that up to the present, little has been done in this field. Whilst archaeological and anthropological research on Southern Africa suggests that a great sensitivity to water and its influence on humans exists, no comprehensive study on the early history of water seems to have been conducted.[17] This can, to a large extent, be ascribed to the fact that a related field of hydrological studies, particularly the history of climate, is still in an early phase of development. Valuable work is now being done in the natural sciences.[18] On the whole, progress is, however, retarded by the absence of reliable data.

Microhistorical evidence, apart from that of anthropological and archaeological work on pre-colonial societies in the region, suggests that

17. A notable exception is the study of A.R. Wilcox, *Great River The Story of the Orange River* (Drakensberg Publications, Winterton, 1986).
18. See for example the work that has been done in the case of Lake Malawi and environs by T.C. Johnson, E.T. Brown, J. McManus, S. Barry, P. Barker and F. Gasse, "A High-Resolution Paleoclimate Record Spanning the Past 25 000 Years in Southern East Africa", *Science,* 296, 2265, 2002-04-05, pp 113-132. For more global perspectives in which Southern Africa features prominently, see H.N. Pollack, S. Huang and P.-Y. Shen, "Climate Change Record in Subsurface Temperatures: A Global Perspective", *Science*, 282, 5387, 1998-10-09, pp 279-281.

there is a substantial *corpus* of material to work from. Van der Merwe,[19] Guelke and Shell,[20] Shillington,[21] Jacobs,[22] Rossouw,[23] Elphick,[24] and Scholtz[25] have given consideration to water-related issues in their studies dealing with historical themes in arid regions in South Africa. The narratives of travellers such as Thunberg,[26] Smith,[27] Barrow,[28] Moffat,[29] Baines,[30] Anderson,[31] Hahn[32] and Somerville,[33] to name but a few, also provide a wealth of information that rarely surfaces in official documents.

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19. P.J. van der Merwe, *Die Noordwaartse Beweging van die Boere voor die Groot Trek 1770-1842* (Reprint of the original c 1937, State Library, Pretoria, 1988).
20. L. Guelke and R. Shell, "Landscape of Conquest: Frontier Water Alienation and Khoikhoi Strategies of Survival, 1652-1780", *Journal of Southern African Studies,* 18, 4, December 1992, pp 803-824.
21. K. Shillington, "Irrigation, Agriculture and the State: The Harts Valley in Historical Perspective", *in* W. Beinart, P. Delius and S. Trapido (eds.), *Putting a Plough to the Ground Accumulation and Dispossession in Rural South Africa, 1850-1930* (Ravan Press, Johannesburg, 1986), pp 311-335.
22. N. Jacobs, "The Flowing Eye: Water Management in the Upper Kuruman Valley, South Africa, c 1800-1962", *The Journal of African History,* 37, 2, 1996, pp 237-260.
23. P.J. Rossouw, "Die Arbeidskolonie Kakamas", *Archives Year Book for South African History*, 14, II (The Government Printer, Parow, 1951).
24. R. Elphick, *Kraal and Castle Khoikhoi and the Founding of White South Africa* (Yale University Press, New Haven, 1977).
25. P.L. Scholtz, "Die Historiese Ontwikkeling van die Onder-Olifantsrivier (1660-1902): 'n Geskiedenis van die Distrik Vanrhynsdorp", *Archives Year Book for South African History,* 29, II (The Government Printer, Cape Town, 1966).
26. C.P. Thunberg, *Travels at the Cape of Good Hope, 1772-1775* (Original c 1795. Edited by V.S. Forbes. Translation from the Swedish revised by J. & I. Rudner; contributions to the foreword by I. Rudner & J. Rourke (Van Riebeeck Society, Cape Town, 1986).
27. W.F. Lye (ed), *Andrew Smith's Journal of his Expedition into the Interior of South Africa – 1834-1836 An Authoritative Narrative of Travels and Discoveries, the Manners and Customs of the Native Tribes, and the Physical Nature of the Country* (A.A. Balkema, Cape Town, 1975).
28. J. Barrow, *An Account of Travels into the Interior of Southern Africa, in the Years 1797 and 1798 I* (A Strahan, The Strand, 1801).
29. R. Moffat, *Missionary Labours and Scenes in Southern Africa Twenty-three Years an Agent of the London Missionary Society in that Continent* (John Snow, Paternoster-Row, London, 1842).
30. T. Baines, *Journal of Residence in Africa 1842-1853 I* (Edited by R.F. Kennedy, The Van Riebeeck Society, Cape Town, 1961).
31. C.J. Andersson, *Lake Ngami or Explorations and Discovery during Four Years of Wandering in Wilds of South-Western Africa* (Facsimile edition by C Struik, Cape Town, 1987, of the second edition, Hurst and Blackett, London, 1856).
32. B. Lau (ed), *Carl Hugo Hahn Tagebücher 1837-1860 a Missionary in Nama- and Damaraland I-IV* (Archives services division of the Department of National Education, Windhoek, 1984).

Works dealing with the history of water *per se* are scarce. Except for the work of Brown,[34] the government botanist at the Cape and inveterate conservationist,[35] little seems to have been done in this regard up to the end of the nineteenth century. There are currently promising indications that some new research work is beginning to emerge, dealing specifically with the colonial period.[36]

As a result of the wide-ranging focus of the areas in which the commodification of water could historically have taken place, the objective was, for the purposes of this discussion, to consider some microhistorical evidence in the fields of human industry, particularly in the areas of hunting, gathering and foraging, pastoralism and agriculture (more specifically for the later period in the area of irrigation operations), as well as mining as agent of technological transformation.

Humans and their water-supplies

It is generally conceded that commodification of water takes place in arid or semi-arid regions where scarcity is the order of the day.[37] Given the right conditions, the manipulation of these resources could even, according to Wittfogel's theoretical investigation in the case of China, give rise to despotic systems of political governance.[38] In the case of Southern Africa, it would be

33. E. and F. Bradlow (eds), *Somerville's Narrative of his Journeys to the Eastern Cape Frontier and to Lattakoe 1799-1802* (Van Riebeeck Society, Series 1, Cape Town, 1979).
34. J.C. Brown, *Hydrology of South Africa or Details of the Former Hydrographic Conditions of the Cape of Good Hope, and of Causes of its Present Aridity, with Suggestions of Appropriate Remedies for this Aridity* (Henry S. King & Co, London, 1875).
35. P.J. Venter, "An Early Botanist and Conservation at the Cape: John Croumbie Brown, L.L.D., F.R.G.S., F.L.S." in *Archives Year Book for South African History*, 15, II (The Government Printer, Parow, s.a.); R. Grove, "Scotland in South Africa: John Croumbie Brown and the Roots of Settler Environmentalism" *in* T. Griffiths and L. Robin (eds), *Ecology and Empire Environmental History and Settler Societies* (Keele University Press, Edinburgh, 1997), pp 139-153.
36. See L. van Sittert, "The Supernatural State: Water Divining and the Cape Underground Water Rush, 1891-1910" in *Journal of Social History,* 37, 4, Summer 2004, pp 915-937; J. McGreggor, "Living with the River: Landscape and Memory in the Zambezi Valley, Northern Zimbabwe," *in* W. Beinart and J. McGreggor (eds), *Social History and African Eenvironments* (James Currey, Oxford, 2003), pp 87-106.
37. Ward, *Water wars Drought, Flood, Folly and the Politics of Thirst*, p 224.
38. See J. Radkau, *Natur und Macht eine Weltgeschichte der Umwelt* (C.H. Beck Verlag, München, 2002), pp 112-114; K.A. Wittfogel, *Oriental Despotism A Comparative Study of Total Power* (Yale University Press, New Haven, 1957). For a contemporary

possible to constitute that, perhaps as a result of low population densities, at most, oligarchic systems of governance could have developed in areas where water-scarcity prevailed.

Over the past fourteen thousand years, water started becoming scarce in central Southern Africa as lakes intermittently started drying up and desertification set in where there had previously been reasonable supplies of water.[39] We are currently faced with the interesting situation that the greater part of the subcontinent is considered as being arid to semi-arid. The average annual rainfall of South Africa is slightly less than 500 millimetres. This is low in comparison with the world average of 860 millimetres *per annum*.[40] An estimated 46 per cent of the surface area of South Africa is considered to range between arid and semi-arid.[41] The average for Namibia is even higher. Less than 10 per cent of South Africa's surface area of about 1,2 million hectares is arable; 67 per cent can be used as pasturage, whilst a mere 7 per cent is suitable for woodland and forest.[42]

It has in fact been possible for humans to survive in the region, primarily as a result of a cultural resilience to drought and aridity, developed over many centuries. The popular definition of drought, as we know it, is however somewhat of a misnomer.[43] It can, at the best of times, instead be considered to be a vague description of a complex set of conditions prevailing intermittently in parts of Southern Africa.[44] We do know that the San, and to a lesser extent

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example of this state of affairs see the highly rated M. Arax and R. Wartzman, *The King of California JG Boswell and the Making of a Secret American Empire* (Public Affairs, New York, 2003). See also A. Krebs, "Water, Land and Cotton: Unmasking a Secret American Empire in *Counterpunch,* 28/29 February 2004 at http://www.counterpunch.org/krebs02282004.html. (Wittfogel's theory has a bearing on the evolution of oligarchic governance and the development of water systems in China.)

39. A.T. Grove, "The Geography of Semi-Arid Lands", *Philosophical Transactions of the Royal Society of London. Series B, Biological Sciences,* 279, 962, A Discussion on Resource Development in Semi-arid Lands (3 May 1977), pp 457-474.
40. B. Turner (ed), *The Statesman's Yearbook the Politics, Cultures and Economies of the World 2002* (Palgrave, Bath, 2001), p 1443.
41. See M. Hailey (ed), *An African Survey (Revised 1956) A Study of Problems Arising in Africa South of the Sahara* (Oxford University Press, London, 1957), pp 973-974.
42. A. van Zyl, *South African Weather and Atmospheric Phenomena* (Briza, Pretoria, 2003), pp 36-37.
43. Van Zyl, *South African Weather and Atmospheric Phenomena*, p 21.
44. For a discussion on drought and its definition since the nineteenth century as a result of population growth, see P.J. van der Merwe, *Die Noordwaartse Beweging van die Boere voor die Groot Trek 1770-1842* (Reprint of the original c 1937, State Library, Pretoria, 1988), pp 186-96. Also see P.J. Venter, "An Early Botanist and Conservation at the Cape: John Croumbie Brown, LL.D., F.R.G.S., F.L.S." in *Archives Year Book for*

the Khoikhoi,[45] had adjusted well to arid conditions in which survival was determined by an ability to cope with water-shortages. The intention here is not to enter into the "Kalahari debate",[46] but instead to point out that it was easier for hunters and foragers to cope with water-shortages, than was the case with pastoralists. When the dry season set in, communities would be drawn closer to places where sustained supplies were available. Once these were exhausted, they would disperse in nuclear groups in the direction of places where sufficient water-supplies were available.[47]

It appears as if communal sources of water-supply were free for all to use, irrespective of whether they were hunter-gatherers or pastoralists. Water-holes tended to be the property of individuals who would take on a leadership role.[48] It did however not imply that there would be any system of reward in exchange for the use of the available water. Water was a communal resource which had to be used for a variety of purposes.[49] It also had to be used in different contexts. For example, in hunting communities, the place of residence seldomly was at the water-source. Instead, they would reside a short distance from water-holes in an effort not to disturb the animals that came to drink.[50] The game was a source of food, as was the case with the edible plants in the vicinity of the water. Fishing was also part of the food production industry.[51] In 1801, Somerville described the fishing activities of a community of San on

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South African History, 15, II, pp 282-283; C.H. Vogel, "Consequences of Droughts in Southern Africa (1960-1992)." PhD thesis, University of the Witwatersrand, 1994, pp 4-5, 18, 28, 44, 79, 171-172.

45. Some authors, such as Elphick, argue that the Khoikhoi benefited from the fact that they could carry substantial amounts of water on the backs of their livestock when they ventured off into waterless regions. They are considered to have been able to survive even better than the San in arid conditions. See Elphick, *Kraal and Castle Khoikhoi and the Founding of White South Africa,* p 11.
46. For some works in which this debate features, see A. Barnard, *Hunters and Herders of Southern Africa A Comparative Ethnography of the Khoisan Peoples* (Cambridge University Press, Cambridge, 1992); J.S. Solway and R.B. Lee, "Foragers, Genuine or Spurious?: Situating the Kalahari San in History", *Current Anthropology,* 31, 2, April 1990, pp 109-146; A. Kuper, "The Return of the Native", *Current Anthropology,* 44, 3, June 2003, pp 389-402.
47. See P. Draper, "Crowding among Hunter-Gatherers: The !Kung Bushmen", *Science,* New Series, 182, 4109, 1973-10-19, pp 301-303.
48. D. Lewis-Williams, *Stories that Float from Afar Ancestral Folklore of the San of Southern Africa* (David Philip, Cape Town, 2002), p 5.
49. This is a tradition that prevails up to the present in rural parts of Zimbabwe. See B. Derman, "Cultures of Development and Indigenous Knowledge: The Erosion of Traditional Boundaries", *Africa Today,* 50, 2, Fall/Winter 2003, pp 79-80.
50. Lewis-Williams, *Stories that Float from Afar*, p 11.
51. Moffat, *Missionary Labours and Scenes in Southern Africa*, p 55.

the banks of the Orange River, at what is today Prieska.[52] An aquatic territoriality, pertaining to fishing opportunities, might have evolved. However, it is unlikely that the available fishing resources and human population pressures on the land would have been at a premium.

Little long-term planning was done to conserve the use of water-sources. If a fountain, stream or well dried up, it was considered as merely being a problem with which people had to contend.[53] Naturally they would ultimately be forced by nature to move away from a place of residence, until such time as the supplies were restored. It is difficult to stipulate with certainty if water, despite great scarcity, would have been commodified under these circumstances. Locating the potential for a process of commodification appears easy. The best example is the ostrich eggshell used by the San people as a water-container. It is true that they used a multitude of storage systems, such as seal bladders, the stomach-sacks of wild animals, and self-made pottery.[54] Somehow, however, these containers do not convey any symbolic value that could be related to commodification, because of the personalised character they might have had for the owner.

Reference to ostrich eggshells are found in numerous sources dealing with the San. We know that in some cases these shells were decorated in an elaborate manner.[55] They were consequently used frequently. Moreover, there are indications that the eggshells were used in a singular manner, i.e. one eggshell filled with water per person. There is however also indications that as many as twenty-four eggshells filled with water were carried in a net in areas where fresh water-supplies were low.[56] As a rule, the labour dispensation within the nuclear community of the family determined that women and children were responsible for water-related tasks. Under certain conditions, the males also participated.[57]

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52. E. and F. Bradlow (eds), *Somerville's Narrative of his Journeys*, p 79.
53. B. Lau (ed), *Carl Hugo Hahn Tagebücher 1837-1860 a Missionary in Nama- and Damaraland, Part 1 1837-1845*, p 111. Diary entry: 1843.02.09; and p 189. Diary entry: 1844.10.09.
54. G.W. Stow, *The Native Races of South Africa A History of the Intrusion of the Hottentots and Bantu into the Hunting Grounds of the Bushmen, the Aborigines of the Country* (Edited by G. McCall Theal, Swann Sonnenschein & Co. Ltd, London, 1910), p 49.
55. Stow, *The Native Races of South Africa*, p 50.
56. E. and F. Bradlow (eds), *Somerville's Narrative of his Journeys*, p 68; A. Smith, C. Malherbe, M. Guenther and P. Berens, *The Bushmen of Southern Africa A Foraging Society in Transition* (David Philip Publishers, Cape Town, 2000), p 16.
57. I. Schapera, *The Khoisan Peoples of South Africa Bushmen and Hottentot* (Reprint of the 1930 edition, Routledge and Kegan Paul Ltd, London, 1960), p 142.

What can however not be determined is whether water, located and acquired under extremely difficult conditions, was subject to barter or trade. Circumstantial evidence suggests survival was a matter of crucial importance in the arid areas of Southern Africa. Therefore, if thirst was not used as a strategy for eliminating an enemy or foe,[58] the right of access to water would generally be respected under all conditions for people who were thirsty. For example, it was considered a great transgression for the water-supplies of people – travelling from one place to the next – to be stolen when they had been deposited beforehand in eggshell containers in the veld.[59] We know that when the San as hunter-gatherers travelled over large tracts of land where water was not readily available, they would send out individuals to bury the shells filled with water, in the sand. Alternatively, the containers would be placed in trees. When the travelling communities later passed by, supplies of water would be available.[60] These were usually times, according to Lewis-Williams:

> When the plant foods withered, waterholes dried up and the antelope migrated to better watered areas, people activated one of their numerous links with those in distant camps and so moved to better endowed areas.[61]

There was perhaps too much of a communal sense of mutual dependence for survival to attach a material value to an essential resource such as water. It thus seems unlikely that it could have been turned into a commodity. There are indications of gift exchange. This could have applied to the acquisition of water-supplies. Mitchell, working on the findings of Wiessner (1882), is of the opinion that the tradition of *hxaro,* (gift exchange) increased amongst people of the Late Stone Age in times of drought.[62]

We know that liquids, such as sour or fresh milk were in demand. They had substantial energy-giving value.[63] This might have been subject to barter transactions. Furthermore, both the San and Khoikhoi relied on available endemic plants as alternative water-sources.[64] These items, depending on their

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58. J.W.N. Tempelhoff, "Die Okkupasiestelsel in Soutpansberg", *Archives Year Book for South African History,* 60, (The Government Printer, Pretoria, 1997), p 151.
59. Schapera, *The Khoisan Peoples of South Africa*, p 143.
60. Schapera, *The Khoisan Peoples of South Africa*, p 143; A.K. Cornelissen, *Langs Grootrivier Grepe uit die Kleurryke Geskiedenis van die Noordweste* (s.l., s.a.), p 29.
61. Lewis-Williams, *Stories that Float from Afar*, p 5.
62. P. Mitchell, *The Archaeology of Southern Africa* (Cambridge University Press, Cambridge, 2002), pp 215-216.
63. Thunberg, *Travels at the Cape of Good Hope, 1772-1775*, p 313.
64. Thunberg, *Travels at the Cape of Good Hope, 1772-1775*, pp 57, 313; Barnard, *Hunters and Herders of Southern Africa*, p 43; Stow, *The Native Races of*

availability, had a value as a commodity of barter, as Thunberg seems to suggest. Plants that were particularly sought after, were the kanna *(Sceletium emarcidum)*.[65] In addition to quenching thirst, it has narcotic qualities.

Circumstances of contact between the indigenous hunter-gatherers and pastoralists with Europeans, from the earliest times on, created conditions that were favourable for the commodification of water. It is known that British sailors, as was the case with the Portuguese and Dutch too, had to pay for water-supplies in Table Bay at the start of the seventeenth century.[66] As a rule, travellers in the interior also rewarded the San if they helped them locate water-resources in the arid parts of the country.[67] It is evident that whilst there was no direct payment for supplies of fresh water for travellers, there most certainly are indications of rewards for the application of skills in the acquisition of water. For example, travellers into the interior of Southern Africa would take Khoisan workers who were familiar with the environment and knew how to locate water-supplies, with them.[68] In the available literature there are few indications of a specifically commodified value placed on water. Instances have been recorded, for example, of a European traveller in the Namib who was literally coerced (as a result of thirst) by a Khoikhoi guide to make over payments for access to water.[69] Also in the case of the Eastern Cape, there were attempts to make travellers in the Karoo pay for water in the 1850s. Thomas Baines recorded in his diaries how the members of a trading expedition into the interior, of which he formed a part, were confronted by workers of an absent landlord to pay for water.[70] On another occasion the traders gave gifts in exchange for access to water. This was considered to be an extension of a basic courtesy.[71] The circumstances under which these transactions were conducted, had a very specific character. The consumers of water were traders first and foremost. The local residents, presumably, saw this as an opportunity to barter their available resources (water and grazing) to acquire goods from the traders.

South Africa, pp 56-57; B.-E. van Wyk and N. Gericke, *People's Plants A Guide to Useful Plants of Southern Africa* (Briza Publications, Pretoria, 2000), pp 81-82.

65. Thunberg, *Travels at the Cape of Good Hope, 1772-1775*, p 248. Van Wyk and Gericke, *People' s Plants*, p 172, refers to it as *Sceletium tortusum*, or *kougoed*.
66. Barrow, *An Account of Travels into the Interior of Southern Africa I*, p 4.
67. E. and F. Bradlow (eds), *Somerville's Narrative of his Journeys*, p 73.
68. Thunberg, *Travels at the Cape of Good Hope, 1772-1775*, p 49.
69. Andersson, *Lake Ngami or Explorations and Discovery*, pp 62-63.
70. T. Baines, *Journal of Residence in Africa 1842-1853 II* (Edited by R.F. Kennedy, The Van Riebeeck Society, Cape Town, 1964), pp 14-15 (entry: 19 February 1850).
71. Baines, *Journal of Residence in Africa 1842-1853 II*, pp 10-12 (entries: 17 and 18 February 1850).

Pastoral industry and the commodification of water

Indigenous pastoral people relied on the available local water-supplies to a greater extent than hunting-gathering and foraging communities. It stands to reason that they opted to seek for themselves places of residence where water and grazing was in ample supply. The anthropological record suggests that pastoralists from diverse communities shared the available resources as part of traditions that had evolved over many generations of changing seasonal climatic conditions.[72] It is possible that there could even have been a sound interaction with predominantly hunting communities in these areas. The presence of large numbers of livestock, might however have affected the hunting potential of certain areas. These conditions might have been conducive for Khoi pastoralists, to get hunter-gatherers (San) to work for them. They would even, by the nineteenth century on the edge of the Kalahari, have made use of non-Khoi or non-San African communities, who had been impoverished as one of the after-effects of the *Difaqane*.[73]

Elphick argues, as the pastoralists (Khoikhoi) moved from the Highveld of the present-day Free State and the former Transvaal, they tended to move in groups along the valleys of rivers, such as the Riet, Modder, Vet, Vaal and the Harts. Later they moved into the Orange River passage itself.[74] It was in these regions that they first met up with pastoralists of European origin who had also ventured into the interior to locate grazing for their livestock. Group formations of pastoralists proved to be more viable in valleys. They could literally form semi-oligarchic polities – in much the same way as the British settlers in the Eastern Cape, from the 1830s, were able to take over control over the water-supplies of local rivers,[75] and to a lesser extent the Voortrekkers at Ohrigstad in the 1840s.[76] It became possible for the Khoi pastoralists to select for themselves territories where pastoral farming activities could be sustained.[77] The indigenous pastoralists at the Cape were thus, at the time of the Dutch arrival, transhumance pastoralists who had secured for themselves a livelihood by practising an extensive pastoral lifestyle.[78] The hunters and gatherers (San), were even more mobile than the pastoralists, as they constantly moved about in

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72. Barnard, *Hunters and Herders of Southern Africa*, pp 43-44.
73. Moffat, *Missionary Labours and Scenes in Southern Africa*, pp 282-283.
74. Elphick, *Kraal and Castle Khoikhoi and the Founding of White South Africa*, p 18.
75. For examples, see Baines, *Journal of Residence in Africa 1842-1853 I*, pp 113-124.
76. For example the settlement of A.H. Potgieter in the Ohrigstad Valley in the 1840s. See J.S. Bergh, "Blanke Vestiging tot ca. 1850" *in* J.S. Bergh (ed), *Geskiedenisatlas van Suid-Afrika Die Vier Noordelike Provinsies* (J.L. van Schaik, Pretoria, 1998), pp 130-131.
77. Elphick, *Kraal and Castle Khoikhoi and the Founding of White South Africa*, p 18.
78. Guelke and Shell, "Landscape of Conquest", p 804; Elphick, *Kraal and Castle Khoikhoi and the Founding of White South Africa*, p 58.

search of *veldkos* [veld foods] and game.[79] Securing sufficient water-supplies, in a matter-of-fact manner, formed part of the subsistence economy in which these peoples flourished. Making a contribution in kind, as a means of paying for water, was unlikely. There were few stresses of population density along the coast or in the interior at the time.

As a result of the large amounts of water required for pastoral farming, and the fact that communities of people and their livestock tended to lead a nomadic life, the technology of digging and maintaining wells became a refined activity of human industry in the arid regions of Southern Africa. According to Stow, the country between the Khamiesberg and the Orange River was populated with various Namaqua communities. They owned large herds of cattle. Moreover, they dug deep wells in the beds of streams. These only flowed periodically and were covered in order to prevent evaporation.[80] It seems that even after some of the Nama had been subjugated and forced to move to more arid regions, they were still able to apply their technological skills of well-making to secure survival.[81] The Ovambo also had a number of skills, one of the major attributes being the ability to sink wells of great depth. In some cases, these wells were more than 30 metres in depth "with a spiral path cut round the sides to enable people to descend to the water".[82] Here we similarly find few indications of people having to pay for water as a commodity. Instead it was a shared resource. There was however also the understanding that wells were there to be maintained and developed for extended use by whoever used it.

The advent of the Europeans

Free access to fresh water was a custom that was observed at the Cape from the earliest times of European settlement.[83] Once the refreshment station came into operation in the seventeenth century, water was supplied at no charge to vessels anchoring in Table Bay.[84] It is possible that payments were made for labour to help load the stock onto the ships. There were however no indications of water

79. Guelke and Shell, "Landscape of Conquest", p 804.
80. Stow, *The Native Races of South Africa*, p 251; Also see Moffat, *Missionary Labours and Scenes in Southern Africa*, pp 66-67.
81. Stow, *The Native Races of South Africa*, p 253.
82. Stow, *The Native Races of South Africa*, p 264.
83. Discussions with Dr Dan Sleigh, in April 2004, confirmed the fact that water was never a commodified product in the period of the VOIC at the Cape.
84. Instruksies vir die Saldanhavaarders, Jurrien Jansz. Van Amsterdam, Gerrit Hermansz. Van Deventer en Thomas Christoffel Muller (25 Januarie [1658], Uittreksels uit dagregister 9 Oktober 1682, resolusies 11 Desember 1682, dagregister 31 Mei 1683, *in* M.K. Jeffreys (ed), *Kaapse Argiefstukke. Kaapse Plakkaatboek* I (1652-1707) (Cape Times Limited, Cape Town, 1944), pp 34, 186, 187, 191.

being a commodity. We do know that large supplies of distilled water were imported from the Netherlands. Although it may have been used as "commodified" water for drinking purposes by certain senior officials, it seems to be more likely that it was used in the preparation of alcoholic beverages.[85] Seltzer water, along with tea, coffee, chocolate, beer and brandy, was a general feature of the liquid commodities on the urban domestic table at the Cape by the eighteenth century.[86]

Agriculture was an important area of human industry at the Cape. Water was made available with the assistance of the company's officials in the urban settlement of Cape Town. The provision of abundant and reliable water-supplies to urban consumers from the seventeenth century onward, implies that it was a service rendered by the authorities.[87] In rural towns of the Karoo, the local water-supply system was indirectly paid for in the form of labour and technology made available by local residents to help with the construction and maintenance of the town's water-supply scheme. Taxation was also introduced to finance the water-supply.[88] There are thus indications of a form of commodification of water in urban areas. In essence it was however an extension of public service in the interest of civil society, managed by the responsible local authority. It thus took on the form of a utility service and the local infrastructure.

It was in the more arid rural regions where the competition for land had negative consequences. The advent of white settlement in the interior created a new set of circumstances. As an extension of their cultural activities, the new settlers of European origin brought in exotic agricultural commodities. Where water-supplies were available in abundance, they would plant vineyards and grow wheat. In some areas, such as the Olifants River Valley, they would even resort to irrigation farming and rice paddies.[89] Under these circumstances, water became of quintessential importance to agricultural production. In order to secure the maximum supplies of water, the white farmers allocated a substantial area of land for themselves, by means of conventions pertaining to

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85. See E.L. Hall and A.M. Dietrich, "A Brief History of Drinking Water" at http://www.wrb.state.ri.us/programs/eo/historydrinkingwater.htm (accessed on 1 April 2004). It is reported that an Arabian alchemist, Geber, in the eighth century distilled water to imbibe spirits and clean medicines.
86. C.G. Botha, *Social life in the Cape Colony with Social Customs in South Africa During the Eighteenth Century*, (C. Struik [Pty] Ltd, Cape Town, 1975), p 50.
87. See T. Murray, "Much Water Under Many Bridges: The History of the Catchments, Rivers, and Drainage Systems of Greater Cape Town." Unpublished work in progress, Rondebosch, March 2001, p 8.
88. P.J. Venter, "Landdros en Heemrade (1682-1827)", *Archives Year Book for South African History*, 3, II (The Government Printer, Cape Town, 1940), pp 117-119.
89. J. Burman, *Waters of the Western Cape* (Human & Rousseau, Cape Town, 1970), p 74.

land tenure. This meant that indigenous hunter-gatherers, foragers and pastoralists no longer had ready access to water-supplies. By the 1770s, Thunberg noted how whites had literally forced the indigenous people off from the land in places where water was available in abundant supplies.[90] Contextualising these conditions in modern terms, Guelke and Shell argue:

> There is no question that the Khoikhoi were weakened by European harassment and by the unequal terms of frontier trade, but many retained considerable herds and flocks, which they could regenerate if they were allowed to husband them in the traditional way. Their growing inability to water and pasture their animals became the ever worsening problem. European colonists, in gaining control of springs and pasture lands, made it impossible for the Khoikhoi to maintain their livestock, and just as importantly prevented the Khoikhoi, who had lost some of their stock, from ever re-establishing themselves as independent graziers. This process started slowly, first in the high rainfall areas of the peninsula in the seventeenth century, but increased most rapidly after 1706 when the prime peninsula land was occupied and burgher settlement started to spread into the low rainfall areas where the carrying capacity of the land was substantially less.[91]

Transhumance activities led to conditions in which the Khoikhoi pastoralists led a mobile life. It created opportunities for white farmers to move in. Choice springs and other sites of permanent water were often left unoccupied when the Khoikhoi moved around in search of suitable grazing. Although they might have left their water-sources unattended, it was by no means meant that they would not at some time or another return to the source again.[92]

In some cases, the Khoikhoi were literally used as "bloodhounds" by the European settlers to locate the most fertile lands. Once the Khoikhoi had settled on the land, the "Afrikaners" or Europeans would appear. They would then flatter the Khoikhoi and provide them with small gifts. The Khoikhoi, in turn, would allow them to settle alongside. As soon as the grazing facilities became scanty, the Khoikhoi would be induced by means of small gifts to withdraw and travel further inland.[93] This implies that water as a resource was secured by means of gift exchanges. The indigenous people were rewarded for their skills and abilities at locating sources of water at a greater distance. It, in effect, became a form of commodification, in that the indigenous peoples increasingly lost free access to the sources of water they had left, after receiving the "gifts".

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90. Thunberg, *Travels at the Cape of Good Hope, 1772-1775*, pp 105-106.
91. Guelke and Shell, "Landscape of Conquest", p 823.
92. Guelke and Shell, "Landscape of Conquest", p 805.
93. Guelke and Shell, "Landscape of Conquest", p 819.

The presence of missionaries, as from the nineteenth century, made it possible for the indigenous peoples to become familiar with hydrological technology. It also secured alternative forms of survival for them under arid conditions.[94] Temporarily it ensured them of permanence on the landscape, close to water-resources. For the missionaries, the availability of water was one of the preconditions of community formation.[95] The opportunity for proselytising activities improved in the final quarter of the nineteenth century when "mining" for water, by means of sinking boreholes for subterranean water-supplies, and using modernised windmills, started changing the socio-economic and cultural landscape of the semi-arid and arid regions of Southern Africa.[96]

A subsequent phase of development that influenced the changing nature of water as resource, was industrialisation. South Africa's mining revolution had its origins in the arid parts of the Cape where at Okiep in 1855, copper-mining operations got underway.[97] It was also in the semi-arid region of the Northern Cape, at the confluence of the Orange and Vaal Rivers where in 1866-1867, the first discoveries of alluvial diamonds led to the mining boom that culminated in the founding of Griqualand West as a major mining centre in South Africa.[98] Water had been instrumental millions of years before in opening up the valuable gems right up to the mouth of the Orange River. By the nineteenth century, the region was semi-arid and water had become a scarce commodity in the rapidly growing urban environment of Kimberley.[99]

Irrigation had always been one of the major options for the development of the arid and semi-arid regions of South Africa. In the 1850s, as a result of a subsistence crisis, the water-resources of the London Missionary Society station at Kuruman (established in 1824) became the site of one of the first

94. G. Menzel, *Die Rheinsche Mission aus 150 Jahren Missionsgeschichte* (Verlag der vereinigten Evangelischen Mission, Wuppertal, 1978), pp 55-58.
95. Moffat, *Missionary Labours and Scenes in Southern Africa*, p 83.
96. See S. Archer, "Technology and Ecology in the Karoo: a Century of Windmills, Wire and Changing Farming Practice" *in* S. Dovers, R. Edgecombe and B. Guest (eds), *South Africa's Environmental History Cases and Comparisons* (Ohio University Press and David Philip Publishers, Athens and Cape Town, 2002), pp 120-125; L. van Sittert, "The Supernatural State: Water Divining and the Cape Underground Water Rush, 1891-1910", *Journal of Social History,* 37, 4, Summer 2004, pp 916-921.
97. R.L. Gibson and A.F.M. Kisters, "The Geology and Mineralization of the Okiep Copper District: An Overview", *South African Journal of Geology,* 99, 2, June 1996, pp 105-106; Anonymous, "Okiep, Namaqualand" at South Africa online travel guide at http://www.southafrica-travel.net/namaqua/e5_okiep.htm; M.G.C. Wilson, "South Africa's Geological Gifts", *Geotimes,* December 2003 at http://www.geotimes.org/dec03/feature_SAfrica.html.
98. G.F. Kunz, "The Origins of South African Alluvial Diamonds", *Science* (New series), 72, 1873, 21 November 1930, pp 515-520.
99. L. Phillips, *Some Reminiscences* (Hutchinson & Co., London, s.a.) pp 13-14.

comprehensive irrigation schemes in the semi-arid interior of South Africa.[100] It was at this time that water started becoming a commodity.[101] Increasingly, water was considered to be a crucial resource for generating wealth. By the 1870s, the Cape Colonial government supported the development of irrigation initiatives.[102] Small urban trading settlements, such as Olievenhoutsdrift (later known as Upington) on the banks of the Orange River, were established with missionary support in the 1880s.[103] Irrigation formed the foundation of the anticipated development of these settlements.[104] In 1898, the Dutch Reformed Church started an irrigation scheme at the neighbouring village of Kakamas. It was intended to provide the opportunity of economic recovery for many destitute white residents of the region who had been ruined by the drought of 1895 and the subsequent rinderpest epidemic of 1896-1897.[105]

The irrigation revolution, which gained momentum at a time when the industrial development of South Africa started becoming more diverse,[106] meant that water was now a commodity, necessary for creating wealth. Food had to be produced for the rapidly developing urban areas of the country.[107] Interestingly, many of the early visionary irrigation schemes, were the product of private initiatives.[108] By the early twentieth century, irrigation schemes in the semi-arid regions – as was the case with borehole sinking operations to extract subterranean water – were *inter alia* considered a means of preventing white rural residents from

100. J.H. du Bruyn, "Die Aanvangsjare van die Christelike Sending onder die Thlaping, 1800-1825", *Archives Year Book for South African History,* 52, II (The Government Printer, Pretoria, 1989), p 83; N. Jacobs, "The Flowing Eye: Water Management in the Upper Kuruman Valley, South Africa, c 1800-1962", *The Journal of African History,* 37, 2, pp 237-260.
101. Moffat writes, for example, about the missionaries' water supplies being cut off at Kuruman by the local African irrigation farmers. See Moffat, *Missionary Labours and Scenes in Southern Africa*, pp 284-285.
102. A.R. Turton, R. Meissner, P.M. Mampane and P. Sereme, *A Hydropolitical History of South Africa's International River Basins. WRC Report 1220/1/04* (Water Research Commission, Pretoria, 2004), p 117.
103. Cornelissen, *Langs Grootrivier*, p 22.
104. Archive Karra-Hais Water Board. K-H 1. Minute Book I of Upington Waterworks Co., p 42. Upington Gemeente Vergadering in de Kerk den 9den July 1883.
105. For a contemporary description of the circumstances of destitution, see J.M. Simon, *Bishop for the Hottentots African Memories 1882-1909* (Benziger Brothers, Inc., New York, 1959), pp 96-100. Also see P.J. Rossouw, "Die Arbeidskolonie Kakamas", *Archives Year Book for South African History*, 14, II (Government Printer, Parow, s.a.), p 367; M. Cole, *South Africa* (Methuen and Co Ltd, London, 1966), p 131.
106. E.A. Nobbs, "Agricultural Problems at the Cape of Good Hope" *in* W. Flint (ed), *Science in South Africa a Handbook and Review* (T. Maskew Miller, Cape Town, 1906), pp 379, 385-386.
107. Hailey (ed), *An African Survey*, p 975.
108. W. Beinart, *The Rise of Conservation in South Africa Settlers, Livestock, and the Environment 1770-1950* (Oxford University Press, Oxford, 2003), pp 164-165.

becoming part of the urbanisation process that had started after the Anglo-Boer War (1899-1902).[109] Schemes initiated in the wake of the Great Depression (1930-1933), were Upington (1929)[110] and Vaalharts (1934).[111] Many others followed.[112] Most were intended to alleviate white poverty.

The creation of irrigation schemes and the commodification of water, in order to secure wealth, had the overall effect of working to the detriment of indigenous peoples in the arid and semi-arid regions. They were increasingly marginalised as landowners, agriculturalists, pastoralists and hunters. The most elementary manifestations of this state of affairs included whites taking over potentially good agricultural lands that had previously been used by indigenous peoples.[113] It also implied inferior water-supply facilities in the townships for people of colour in all parts of the arid and semi-arid regions.[114]

Until the 1950s, the development of irrigation schemes in South Africa was one of the major responsibilities of the State. With the exception of creative and constructive conservation approaches to water-management in parts of the former Transvaal, the State invested heavily in the development of some 35 flood-water storage and irrigation schemes in South Africa. By 1951, these developments were estimated to be in the vicinity of £20 million.[115] It was only in the latter part of the 1950s that new approaches to the use of water were introduced. This coincided with the transformation in 1956 of the Union of South Africa's Department of Irrigation (established in 1913)[116] into the Department of Water Affairs.[117] At the time it was realised that industrial development had been stifled by the under-supply of water. It also affected consumers in the urban areas of the country – the areas where most of the

109. R.W. Wilcocks, "Psychologiese Verslag: die Armblanke (II): Die Armblanke-Vraagstuk in Suid-Afrika" *in Verslag van die Carnegie-kommissie* (Pro-ecclesia Printers, Stellenbosch, 1932), pp 105-115 and Chapter 11.
110. Cole, *South Africa*, p 131.
111. H. Bornmann, *Vaalharts* (Vaalharts Halfeeufees-komitee, Hartswater, 1988).
112. See, for example, Turton, Meissner, Mampane and Sereme, *A Hydropolitical History of South Africa's International River Basins*, pp 116-148.
113. M. Goldblatt and G. Davies, "Water Energy and Sustainable Development in South Africa", *Development Southern Africa,* 19, 3, September 2002, p 369.
114. K. Shillington, "Irrigation, Agriculture and the State: the Harts Valley in Historical Perspective" *in* W. Beinart, P. Delius and S. Trapido (eds), *Putting a Plough to the Ground Accumulation and Dispossession in Rural South Africa, 1850-1930,* pp 314-316, 323; N. Jacobs, "The Flowing Eye: Water Management in the Upper Kuruman Valley, South Africa, c 1800-1962", *The Journal of African History,* 37, 2, pp 237-260.
115. Hailey (ed), *An African Survey*, p 976.
116. Bate and Tren, *The Cost of Free Water*, pp 76-77.
117. L.D. Hobbs and R.F. Phelines (eds), *Water 75* (Erudita Publications, Ferreirasdorp, s.a.), p 41.

country's capital was generated. Regardless of this awareness, unsustainable water-schemes, such as the Gariep Dam in the southern Free State, continued.[118] By the 1970s there were concerted efforts to change the state of affairs. This was evident from the consumption rates. In 1910 an estimated 95 per cent of the 3 000 million cubic metres of water consumed in South Africa, was for the purposes of the farming industry. By 1975, when water-consumption in the country had almost quadrupled, the farming sector's share had dropped to 75 per cent.[119] At the turn of the new millennium, agriculture's share of South Africa's water was down to 54 per cent.[120] This was largely as a result of a growing environmental awareness that had taken place in South Africa by the early 1990s.[121]

After 1994, the process of water-consumption in South Africa came under scrutiny and new strategies, such as management plans, provided within the framework of the *National Water Act* (Act 36 of 1998), were implemented to ensure that water was used in a more responsible manner, including for the purposes of irrigation in the arid and semi-arid regions of the country.[122]

Conclusion

It is difficult to determine with certainty that water was a commodity in the pre-colonial society of the arid and semi-arid regions of Southern Africa. Hunter-gatherers and foragers tended to have the mutual understanding that water-resources, for as long as they were available, would be freely accessible to consumers. Apart from certain political structures of governance taking shape, a specified material value was not attached to the supply of water. The advent of pastoral farming, some 2 000 years ago, at first asserted slightly more pressure on the available resources. The primary technology of digging water-wells for the common good, started gaining ground. It flourished as larger quantities of water were required for humans and livestock. Once people of European origin entered the arid and semi-arid regions, there was competition for the available water-resources. There are indications of payment for services (skills) to people who were able to locate water-supplies for visitors and the new residents of the region. There were also "gifts" for those indigenous people who were prepared to move away (ultimately permanently) in times of

118. J. Clarke, *Coming Back to Earth South Africa's Changing Environment* (Jacana, Houghton, 2002), pp 119-120.
119. Hobbs and Phelines (eds), *Water 75*, p 15.
120. J. Clarke, *Coming Back to Earth South Africa's Changing Environment*, p 128.
121. J. Glazewski, *Environmental Law in South Africa* (Butterworths, Durban, 1992), pp 198-199.
122. Glazewski, *Environmental Law in South Africa*, pp 518-519.

drought. The gesture of these gifts, could be seen as a form of indirect commodification of water as a scarce resource.

It was however with the advent of the mining industry, first for the purposes of mining copper at Okiep and later for mining diamonds at Kimberley, that water started becoming a commodity. Its availability, under conditions of intense industrial development, led to a scarcity which, within the framework of supply and demand, made it possible to cultivate a sense of commodification. At more or less the same time, the technology of irrigation started making inroads in areas where subterranean and ample surface supplies of water were available. At first subsistence economic farming activities were intended to generate personal wealth to secure survival. By the end of the nineteenth century, as a result of the industrial developments, irrigation had become a means of creating wealth in communities that were intended to compete with urban development in other parts of the country. The demand for food products increasingly created opportunities for the development of more irrigation schemes. The export industry also benefited from these developments. The irrigation sector, in times of economic depression and hardship, provided inhabitants of the arid and semi-arid regions with an opportunity to recover from circumstances of destitution.

Irrigation, as a result of population growth and the increasing demands of industrial production processes (particularly related to foodstuffs), created the potential for water to be commodified. Until the 1960s, it was possible for water to be provided fairly cheaply. The increasing demand for more water gave rise to costly water-projects being undertaken. This led to the cost of water being increased considerably.

In the new political dispensation, as from 1994, water became a sub-discourse in the debate on democracy and human rights. By 1996, water was considered to be a basic human right in the country's constitution.[123] In September 2000, President Thabo Mbeki announced that his government would in future grant six kilolitres of water to every household in the country free of charge.[124] Not only was this measure an extension of the principle of access to water as a basic and natural resource – it became, in part, a gesture of the decommodification of the resource. This arrangement was however subject to the implementation of more effective strategies in the management of water as a valuable resource,

123. South Africa. *The Constitution of the Republic of South Africa. Act 108 of 1996*. (Constitutional Assembly, Cape Town, 1996), p 9.
124. South Africa, Department of Water Affairs and Forestry, "Free Basic Water" at http://www.dwaf.gov.za/FreeBasicWater/Defaulthome.asp.

and the affordability of the government's policies.[125] Ironically the poor, particularly in the arid and semi-arid areas of South Africa, once again had to bear the brunt, as the extension of services for domestic water-consumers, were slow to come off the ground.[126] By 31 August 2004, only 41 per cent of the poor households of the Eastern Cape, 47 per cent in North-West Province and 26 per cent in the Limpopo Province had access to free water. A heartening development was that 77 per cent of the poor population in the Northern Cape Province had access to free water.[127]

Rising water-tariffs, over and above the free water-supplies to domestic consumers, suggests that in future water will become a commodity in South Africa's urban areas. Should there be a lapse in vigilance by the Water Management Division of the Department of Water Affairs and Forestry, water could well become a commodity – particularly in the arid and semi-arid parts of the country. For the meantime, it is still possible to argue with some conviction, that there is little resemblance of "symbolic commodification" between the Stone Age ostrich eggshell filled with water and a bottle of the best of *Messieurs Perrier* or *Valpré.*

Abstract

The commodification of water is a spin-off from the rapid advances made by liberal capitalism in all parts of the world since the late-twentieth century. Increasingly water, traditionally considered as being a natural resource, has become subject to commodification. In this article an overview is given of the human consumption of water in the arid and semi-arid parts of Southern Africa.

Consideration is given to the San and Khoikhoi's traditional patterns of using water. Working from the premise of transition from hunting, gathering and foraging to pastoralism, it is clear that even in the more arid regions, water was freely accessible in the pre-colonial history of South Africa.

In the colonial period, as from 1652, tracts of land with water-supplies fitted into a new dispensation of land tenure. This had a negative impact on

125. South Africa, Draft White Paper on Water Services: Water is life, Sanitation is Dignity (Department of Water Affairs and Forestry, October 2002), pp 33-34. Available at http://www.dwaf.gov.za/docs/Other/WaterServices/draft%20water%20services%20white%20paper%206.1.pdf.
126. The problem is now being researched by Ms Ina Gouws, (a PhD student at North-West University) in a study entitled "Local Government and Water Demand Management (WDM): the Case of Khara-Hais Municipality."
127. South Africa, (Department of Water Affairs and Forestry, "Free Basic Water: Implementation Status" (31 August 2004) at http://www.dwaf.gov.za/FreeBasicWater/Defaulthome.asp?ThemeID=1.

indigenous hunter-gatherers and pastoralists. It also affected patterns of water-consumption as the population of pastoralists in the interior of the subcontinent increased.

By the time the South African mining revolution started at the copper-mines of Okiep in the 1850s, water had become a commodity. Furthermore, the rapid introduction of technology to procure more water – boreholes and mills for subterranean water-supplies and irrigation schemes for agricultural development from surface supplies – augured in an era of commodification that continued unabatedly until the 1990s. When it was introduced into the political arena as a part of democracy and an extension of human rights, the importance of water became apparent. The government's policy of free water, is seen as part of the decommodification of the resource, subject however, to certain provisos.

Opsomming

Die Kommodifisering van Water in die Dor en Semi-Droë Gebiede van Suider-Afrika: 'n Voorlopige Historiese Verkenning

Die kommodifisering van water is die resultaat van die snelle vooruitgang wat liberale kapitalisme sedert die laat-twintigste eeu in alle wêrelddele gemaak het. Water, wat tradisioneel as 'n basiese hulpbron beskou is, het toenemend 'n kommoditeit geword. In hierdie artikel word 'n oorsig van waterverbruik (vir mens en dier) in die dor en semi-droë gebiede van Suider-Afrika gegee.

Oorweging word geskenk aan die San en Khoikhoi se tradisionele patrone van watergebruik. Daar word gewerk vanuit die verwysingsraamwerk van die menslike oorskakeling van jagter-versamelaar- na veeherdergemeenskappe. Daaruit blyk dit dat water in die pre-koloniale geskiedenis van Suid-Afrika in die droë gebiede van Suid-Afrika gratis vir alle gebruikers beskikbaar was.

Gedurende die koloniale tydperk, vanaf 1652, is grond toenemend onder stelsels van grondbesit gekonsolideer. Dit het 'n negatiewe impak op inheemse jagter-versamelaars en veeherders gehad. Dit het ook namate die veeboerbevolking toegeneem het, die verbruikspatrone van water geraak.

Teen die tyd dat die Suid-Afrikaanse mynbou-omwenteling in die 1850's met kopermynbou-aktiwiteite 'n aanvang geneem het, was water 'n kommoditeit. Daarby het snelle tegnologiese hulpmiddels om water te ontgin – boorgate en meulens vir ondergrondse voorrade en besproeiingskemas vir landbou uit bogrondse voorrade – 'n nuwe era van kommodifisering ingelui wat tot die 1990's geduur het. Sedertdien het water 'n deel van die politieke debat in die land geword. Dit was spoedig deel van die gesprek oor demokrasie en 'n

verlengstuk van menseregte. Die belangrikheid van dié hulpbron was dus vanselfsprekend. Die Regering se beleid van gratis water word teen hierdie agtergrond gesien as 'n poging om water te dekommodifiseer, maar met bepaalde voorbehoude.

Key words

Water-history, water-use, commodification, irrigation, Southern Africa, semi-arid and arid regions, sustainable development, indigenous traditions.

Sleutelwoorde

Watergeskiedenis, waterverbruik, kommodifisering, besproeiing, Suider-Afrika, semi-dor en droë streke, volhoubare ontwikkeling, inheemse tradisies.