Theoretical Framework and Historical perspective of the Zambia water Sector: Appendices for Zambia Case Study

Second Order Water Scarcity In Southern Africa – R8158: Zambia case study

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1 Theoretical Framework and Literature Review

Water management involves a great variety of actors interacting in numerous ways and at diverse levels. This research explores these interactions and the decision making processes in the Zambian water sector. It applies an actor oriented approach in analysing the power relations and examining the patterns of hierarchy among end and non end water users[1]. It challenges prescribed decentralised models of natural resource management that often overlook and thus struggle to deal with local intricacies. It situates management typologies in a chronological analysis of the water sector and questions the logic applied in decision making and interaction.

The actor interactions are compounded by the multiple use of water by some groups. The prioritisation of needs, the strategies deployed and the decision making in particular locations and environments is influenced by culture, custom and beliefs of the actors as individuals and as a collective. Customary laws are more influential in rural areas. This research locates the categories of culture and custom in the actor narratives. It analyses the strategies and decisions applying the environmental identity and social movement thesis of Political Ecology.

The environmental identity and social movement thesis places emphasis on the local environment. In this research it is applied to inter and intra water user group dynamics particularly identifying potential beneficiaries and the excluded actors at various levels. It is extended to the psychological contracts among the actors using the common property and dependency theories[2]. The dependency concept encompasses the marginalised actors usually found on the fringes of the power networks and often situated in a dual system of customary and common law.

This chapter first explores the Political Ecology theory and its relevance in this research. It then examines the interactions within and among various water user groups particularly the power dynamics at various levels using an actor based perspective. The constructs of water management and representations of water, which are sometimes made within a legal framework are introduced and analysed. The chapter ends with conceptualisations of the decision making frameworks in the water sector. The term actor does not restrict itself to end users and emphasises the increasingly influential role of some actors such as financing institutions and development agents that are often non end users. An actor is anyone with interest in a particular resource[3]. An end user has interest in using the water resources and gaining access to them.

[1] End water users include end users such as domestic users, agricultural users and industrial users. The non end users include: national regulators, departments within government ministries, NGO project teams, International Financial Institutions, donor agencies, consultants and researchers.

[2] Ostrom (1990, 30) defines common property as a natural or man-made resource system that is sufficiently large as to make it costly to exclude potential beneficiaries from obtaining benefits from its use. Dependency theories originated as a criticism of modernisation theories (Robbins 2004, 50). They make use of political and economic policies and practices to explain the sustenance of poor nations (periphery) and rich nations (centre).

[3] The use of the term actor dispels notions of power that are associated with the use of the term stakeholder by recognising each one's role. The stakeholder term is used by most official organisations, NGOs and project implementers in deciding the inclusion and exclusion of some actors during

1.1 Political Ecology

Political Ecology is an inter-disciplinary approach to the study of humans and their environments incorporating studies from geography, sociology, economics, history, political science and anthropology. Attempts at its definitions are rooted in its development as a theoretical approach. Bryant (1991, 165) describes it as: an inquiry into the political sources, conditions and ramifications of environmental change. Atkinson (1991, 193) phrases it as a call for a more practical look at building a world that prevents the expected ecological catastrophe resulting from a continuation of the contemporary cultural trajectory or a project to achieve a Green Utopia. Robbins (2004, 6) summarises several definitions of Political Ecology, paying particular attention to the desired goals of the authors. In his view the understandings appear to describe empirical, research based explorations to explain linkages in the condition and change of social environmental systems, with explicit considerations of power. He adds that the exploration is done within a normative understanding that there are better, less coercive, less exploitative and more sustainable ways of achieving the same targets. He identifies the research fields as: causes of starvation, soil erosion, landlessness, biodiversity decline, human health crises and the general exploitation of other people and environments for limited gain of specific social actors at the cost of the collective.

This research does not attempt to add to the range of definitions of Political Ecology but rather explores its application in the analysis of decision making and strategies in the Zambian water sector. It questions the productive logic deployed by the actors and reveals some of their strategic logic (Trottier 1999, 19). It unveils some possible reasons for the variations between official policies and grass root activity. It aims to demonstrate some of the sometimes unpredicted and undesirable impacts of policies and dominant approaches to resource management using local narratives (Robbins 2004, 12). This research embraces Bryant's Political Ecology definition, taking in the wider meaning of the term environment to include economic and social environments. These facets are used to locate the actors in the Zambian water sector in their multi scalar situations where they interact at multiple levels of decision making, from the community to the international level. Not all the actors may be aware of the full extent of the multi scalar factor. Political Ecology shapes our analysis in several ways.

Roussopoulos (1993, 87) suggests that "Political Ecology advances the idea that the science of ecology itself cannot be divorced from and indeed imposes certain political conceptions that privilege action at the local and regional levels, against what has been called the imperialism of the state". The state is presumably controlled by particular groups who promote their own interests. In this research the state is identified as an actor that interacts with other actors in the allocation and control of the water resources. The research advocates for the local level of resource management based on findings at the grass root level. It illustrates some of the conflicts in the state's focus on economic development and the community level activity that draws heavily on social development and maintaining social harmony. Presumably the government actors assume economic development can result in social

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consultation and dialogue over particular issues. Its use in this research refers to the particular context adopted by these actors.

and political development thus improving the quality of lives for the citizens. Roussopoulos suggests the "redefinition of the quality of life in opposition to the ideology of limitless growth and endless accumulation of commodities on which the existing consumer society is founded". His argument is rooted in the western culture, which is undoubtedly spreading to the southern hemisphere given the increased movement of goods and services accompanied by the exchange of information through the media[4]. It is increasingly more difficult to distinguish between lifestyles in urban centres from the northern and southern hemisphere. However, the rural areas present a variant path particularly in the less industrialised countries that appear to be missing from Roussopoulos' work. The ecological movement that he mentions was a Political Ecology entry point in to research in these countries.

Political Ecology research, influenced by the ecological movement, initially had a strong focus on the environmental issues in the southern hemisphere. The studies often aimed to provide solutions to identified problems. Authors such as Bryant and Bailey (1997, 3) concluded that "the sources of the 3rd world environmental problems are sufficiently complex and deep rooted to belie any "quick- fix" technological policy solution". They pointed out the "need for far-reaching changes to local, regional and global political- economic processes to achieve some form of solutions to the identified problems". They expected considerable struggle to occur to bring about these changes, adding they necessitated the transformation of a series of highly unequal power relationships, which the present system is based on: 1st/3rd Worlds, rich/poor or rulers/ruled[5]. The power relations encompass the macro-economic environment mainly driven by dominant actors such as the IFIs and the donor countries that continue to influence local policy and national strategies for identifying and addressing particular problems in the less industrialised countries. The frameworks for addressing the problems continue to evolve to incorporate various actors and policies from the IFIs and recipient nations.

Lichtenthäler (2003, 1) notes Bryant's argument that "Political Ecology reflects a rational argument to understanding and potentially solving the 3rd world environmental problems". He appreciates the way in which "the status quo is an outcome of political interests and struggles and advocates the acknowledgement of the existence of a politicised environment in the less industrialised countries in which power relations play a central role". Everywhere in the world environmental problems are affected by the politicised environment. Researchers and practitioners in any location identify a variety of actors present and their power relations, which are influenced by the systems of control and the presence of formal and informal institutions (Trottier 1999, 36)[6]. The systems in industrialised countries, which usually exhibit formalised power relations and decentralised decision making, are often recommended to less industrialised countries by consultants and donor agencies. They attempt to transfer the socio-political forms of management along with

[4] The Northern Hemisphere refers to the industrialised countries that are considered the developed or the first world by some authors. The term is not restricted to the physical boundaries but includes industrialised countries south of the equator.

[5] A system is a balance among competing interests, capabilities and wills that results in a particular status quo. In this case it refers to the competing economic and social interests and capabilities resulting in the classification of the first and third worlds.

[6] In any location competing interests, capabilities and wills of the actors can usually be identified. The more dominant ones are used in decision making or are considered stakeholders in the decision making process.

technological ideas in an effort to solve the environmental problems. However, evidence shows that the actual transfer does not always occur and in some cases adverse effects may result.

Stott and Sullivan (2000, 4) observe that "Political Ecology has increasingly become concerned with the human rights injustices, which can result from the transfer of inappropriate ideas or management forms". They add that "the ecological health and integrity are brought into contexts far from the ecological and political circumstances in which they arose and the exposure of interests served by these ideas". They emphasise the use of local narratives, the significance of theoretical frameworks and the assumptions constraining the construction of environmental narratives. They refer to culturally informed ideas regarding the conceptual separation of people from the environment and the importance of both the temporal and spatial scales of observation in influencing findings of environmental research (Stott and Sullivan 2000, 4). The analysis of the local level explores the assets possessed by local communities and presents opportunities for building on them as opposed to imposing ideas and grafting them locally. Local communities cope with their situations on a daily basis and thus have assets such as acquired knowledge and developed strategies, which are sometimes expressed as the social capital that this research explores. The situation at the grass roots is viewed as a foundation to build on, not as an empty space that needs to be filled. Political Ecology as a field of research continues to evolve with its wide application enabling a shift of emphasis in each study. The wide application and the related inter disciplinarily brings into question its validity as a theoretical framework.

1.1.1 The construction of Political Ecology

Political Ecology as a research field is influenced by various epistemological considerations, which are important in its application as a theoretical framework. To place the postmodern approach adopted in this research in context, it is beneficial to review a selection of other approaches. The realist and interpretivist perspectives generally assume it is possible to obtain valid knowledge about the world and that the written studies can represent social reality (Travers 2001). This assumption is challenged by poststructuralists that emphasise the value of plural perspectives. The philosophical arguments illustrate the conclusion of no real truth but potential ways or approaches that are more suitable for exploring individual questions. According to Bryman and Burgess (1999) "the postmodern turn supports the surrendering of the notion 'this is the way it is' and acknowledges in its place that there can only be versions of social reality". They add that "the reader must be persuaded of the credibility of various accounts". Each narrative is intermingled with personal interpretations from both the actor and the researcher. The postmodern perspective is applied in the separate stages of raw results analysis by paying attention to each response given during interviews and focus group meetings. Key themes that emerge from the analysis are used to compile and critically analyse the strategies deployed by various actors. The potential pitfalls of adopting a postmodern approach to Political Ecology include the face value conclusion that both the epistemological and the theoretical basis are relatively new and considered as hot pots by some critics.

Though Political Ecology is considered a relatively new field of research, according to Stott and Sullivan (2000, 2) "in the sense of politically located ideas of the environment and of the right relationships of humans to and within it, Political

Ecology has existed unconsciously from the moment people started to imagine environmental utopias and dystopias". In the principles of Political Ecology, Atkinson (1991) attempted to develop a strong political science oriented theoretical framework applicable to green politics and the advancement of environmentalism. Other literature of the early 1990s focused on environmental problems caused by capital intensive production in the industrialised societies and "brought on board Malthusian and Neo-Malthusian concerns regarding anticipated problems of human population growth in the countries of the south particularly in relation to what is viewed as a degrading renewable resource base" (Stott and Sullivan 2000, 3).

Peet and Watts (2004, 5-8) trace the origins of the couplet- politics and ecology to the 1970s crediting a variety of commentators: journalists, anthropologists and environmental scientists with coining the term. "It was a way of thinking about questions of access and control over resources and how this was critical for understanding the forms and geography of environmental disturbance and degradation and the prospects of green sustainable alternatives". It was later extended to the post-modern discourse on development. A growth of literature looking at Political Ecology embraced the post-structuralist concerns with 'knowledge-power, institutions and regimes of truth, and cultural differences' (Al-Nims 2004, 27). Al-Nims notes "this led some authors to conclude that Political Ecology did not emerge as a theoretical field as such but was a critique of the modernisation process and its diverse effects on the environments and lives of those it was targeted at". Its critique of linear economic development places it in context in the analysis of trends in development aid. The critique is valuable in this research particularly in the Zambian water sector where most programmes and projects are funded externally and included as national development plans. It allows us to explore the temporal influence of the international actors and their perceptions and models of development in comparison with the local actors.

Blaikie and Brookfield (1987, 17-19) applied a regional Political Ecology approach in their study of land degradation to encompass interactive effects; the contribution of different geographical scales and hierarchies of socioeconomic organisations and the contradictions between social and environmental changes through time. They illustrated the constantly shifting dialectic between society and land based resources. Their study had a radical perspective of the Political Economy concerning the role of the state, which commonly tends to lend its power to dominant groups and classes and sometimes reinforces the tendency of accumulation by them and the marginalisation of the losers. The losers are usually the peasant farmers, urban poor or rural residents.

Adding to the debate on dominant groups, Al-Nims (2004, 28) asserts that "in the post structuralist era, struggles over livelihood and survival go beyond the traditional Marxist perception of struggle through the modes of production. They were used to contest the "truths", imaginations and discourses through which people thought, spoke about and experienced systems of livelihood revealing conflicts over cultural meanings". She concludes "the post structural understanding is based on perceiving society as a field of action where classes are defined more directly in terms of social actions as opposed to structurally determined positions in the production process or cultural institutions. The web of actors increases beyond the boundaries of class to include previously overlooked intra-class conflicts". This research benefits from the perception of society as a field of action. It illustrates that the strategies deployed by

some actors, which are part of their social actions support a particular structure of domination or subordination, whether consciously or unconsciously (Uvin 1998). In addition the classification of the urban poor living on the fringes of urban areas, known as peri-urban areas, is also subjective and temporal for actors in the situation and those analysing it. This point also emphasises the heterogeneity of communities.

The building blocks of Political Ecology can be identified as humans, their environments, their interactions and the impact these have on access, control, knowledge and power relations (Robbins 2004; Peet and Watts 2004; Blaikie and Brookfield 1987). The knowledge and power balances continue to evolve as increasing populations continue to demand more intensive production from resources. The critical analysis of access and control goes further than disturbance, degradation and the prospects of green sustainable alternatives to encompass competition for resources and multiple representations. These are developed gradually and implications are not always foreseeable. The triggers for these changes have to be explored and analysed within specific scales and spaces.

1.1.1.1 The post structural influence

Post-structural theories strongly influence Political Ecologists by their tendency to view the social forces shaping environmental change as uneven, with certain groups adapting effectively to environmental changes. As Swyngedouw points out others fail to effectively adapt and others engage in behaviours that might be adaptive in the short term but are ultimately maladaptive for the larger cultural group (in Zimmerer, K., S. and Bassett, T. (eds) 2001). The postmodern approach incorporates the multiple perspectives of the actors that result in their adopted strategies potentially enabling each one to manipulate the changes for their benefit. Methodologically Political Ecology combines levels of analysis, showing how the micro-level is connected to broader macro-levels, from the individual, to the family, community, nation-state and international economy (Swyngedouw in Zimmerer, K., S. and Bassett, T. (eds) 2001). Political Ecologists also show interest in differentiating between those who gain from and those who pay for processes of social and environmental change. Swyngedouw phrases these as the “enabling and disabling social and environmental conditions; analysing how social power relations are inscribed in the transformation of nature”. This analysis is applied in this research when situating the various strategies deployed by the actors. The power relations change and shift over time and space to influence the strategy choices and vice versa.

Bryant and Bailey (1997, 191-92) argue that “the post structural shift in Political Ecology refuses the division between economy and culture, the material and the symbolic, or structure and agency in social analysis. Their separation results in a biased or incomplete situational analysis that ignores their influence on each other and their interaction”. The shift is characterised by a particular interest in environmental conflict emphasising the politics in Political Ecology, which in their view is mainly illustrated in the less industrialised world. This research also refuses the division by incorporating the economic, political, social and environmental structures in the analysis of the actor interactions and decision making. It emphasises the importance of individual choices and autonomous interactions while advocating for a more localised non rational approach. These ideas are particularly important in the exploration of strategies deployed by the rural residents and urban poor in this research. Researchers often label these residents as over burdened by the economic

and political structures that tend to marginalise them. However, their perceived sense of marginalisation does not always hinder their voice nor completely exclude them from interactions with other actors.

The actors interact at various levels, Al-Nims (2004, 28) points out that "multiple fields of societal interaction are unveiled by the multiple identities of actors, creating more possibilities for the negotiation with and the transformation of constructed realities". She concludes that "the recognition of the importance of unveiling the multiple identities through which individuals and groups interact led to adopting anthropological ethnographic perspectives; to develop a better understanding of local societies as heterogeneous rather than homogeneous political constructs through which socio-environmental conflict is animated". Identities in Zambia refer to a community, clan, ethnic group and associations. Particular actors holding these varied identities value water resources in various ways. The identity of a clan points to a particular trade like fishing or cattle herding. This research explores the influence of these trades on actor interactions.

After considering the various influences that have shaped the field of Political Ecology, Robbins (2004, 14) identifies four theses and the issues they attempt to address. The degradation and marginalisation thesis, the environmental conflict thesis the conservation and control thesis and the environmental identity and social movement thesis , which explains social upheaval by exploring who, where and how. The last thesis links political and social struggles to basic struggles of livelihood and environmental protection. This research explores it by investigating the various strategies deployed by the actors and interactions among them. It especially examines the autonomous social resistance and adaptation to externally planned and often prescribed as inevitable but locally implemented change. It draws on the various theories relating to the economic order and related decision making. This component is explored by questioning who makes the decisions, where the decisions have impact and how this impact is dealt with. It is relevant because it links the social struggles of livelihoods to political and economic multi scalar decision making. Political Ecology continues to evolve like most contemporary theories in social sciences that are multi disciplinary. The local level focus incorporates multi perspectives, narratives and representations. Including all these possibilities continues to be a challenge for most researchers.

1.1.1.2 Some future considerations

Robbins (2004, 6) states Political Ecology advocates for a less coercive way of achieving goals focusing on the local level. His assertion implies the local level is the most appropriate level for decision making. Thus one of the central concerns of Political Ecology is the scalar level of intervention, activity and decision making and the incorporation of multiple perspectives. This research suggests a local actor defined local level that enables the inclusion of multiple perspectives. Roussopoulos (1993, 113) suggests the qualitative consideration of size as a way of dealing with the challenge of inclusion. He points out that what is entirely too big is whatever size it is that takes away our dignity, makes us passive recipients rather than active participants, makes us dependant rather than self reliant, alienates us from the work we do and the people we live with. In this line of thought Stott and Sullivan (2000, 5)

put forward a new challenge for academics in the field; to make an even more explicit commitment to enable alternative voices and narratives to be heard.

Alternative voices require suitable conditions in which to be heard. Seemingly passive recipients are likely to be converted into active participants, shifting from the periphery towards the centre, if they are given an opportunity to share their views and experiences. This can be achieved through a phased decentralisation of decision making processes that emphasises the local conditions and responses. The suitable fora, reasons for being and conversion factors deserve to be explored. The basic concepts in Political Ecology emphasise the continuous and reciprocal links between humans and their environments. These basics are used as the foundation in this research.

1.1.2 The approach

In this research we explore several aspects of Political Ecology drawing on the local level focus and power shifts involving various actors[7]. We apply the framework to examine the dominant approaches in water management and thus deconstruct the various modes of resource appropriation using a multi scalar analysis. The modes explored in this research are representation, access modalities and transfer of them, allocation and use (Trottier 1999)[8]. They illustrate the various manifestations of resource appropriation that go beyond end use. Each actor, especially at the local level, adopts one or more of these modes that frame their perceptions of the resources and influence their decisions, whether consciously or unconsciously. Representation often relates to the culture and norms of a community and the identity of some groups in relation to water resources such as fishermen, farmers, traditional divine mediators and domestic users. Access modalities are affected by regulations, culture, customs and community norms. The transfer of these modalities encompasses the possibility of them evolving over time with changes to the source, in society and the environment. Allocation covers formal and informal rules and considerations by relevant authorities or individuals. Use refers to end use and non end use of resources by various actors.

Enshrined in the local level focus is the shift of power to the local actors which is done by emphasising the autonomously developed social networks, informal negotiations and collective action that is taken for granted and ignored in some cases. The social networks capture the relationships of trust and expectation between community members built through the investment of time and face to face interaction over extended periods of time (Robbins 2004, 151). Roussopoulos (1993, 104) links the shift of power to the ecological movement, which he suggests reinvents politics by destroying the power of the nation-state without violence, where the opposition is usually erroneously directed at the central power[9]. In this perspective people are invited to organise themselves without waiting to be told what to do, to define their

[7] Most mainstream material in Political Ecology seems to focus on problems related to environmental conflict or degraded environments e.g. Stott and Sullivan, Lichlenthaler, Bryant and Bailey, Peet and Watts etc.
[8] These modes are introduced by Weber and Revert, two French authors that Trottier cites in her work.
[9] Politics refers to the process through which relations of power are constituted, negotiated and reproduced. (Source: World Water Council, water and politics project, http://www.worldwatercouncil.org/, accessed on 13th September 2005)

own forms of development and the nature of their needs. This pattern of autonomous development and nature of needs is evident in various communities in Zambia. This research analyses the triggers of this development and the related awakening of civil society indirectly through informal relations. These relations are ideal foundations of the international drives of community participation and are used to tackle the poor standard of services offered by Local Authorities[10]. The awakening of civil society often attempts to import ideas and systems from outside the communities in which projects are implemented. The autonomously developed local knowledge and various adaptive mechanisms are not incorporated into the processes.

The general characteristics of Political Ecology include a focus on empirical research of the human dimensions of environmental change. Harper (2004) notes "the shift from conceptualising these interactions as tending toward equilibrium to recognizing that resource use may be socially adaptive but environmentally destructive. The local community is often perceived as a villain destroying their environment". Most researchers make an attempt at being objective in their studies but Harper points out that "some strands of Political Ecology are not value-neutral; some political ecologists support applying findings to policy in order to achieve social equity along with environmental protection". Policies that are effective in one setting, however, may not be effective elsewhere. Harper ascertains that only through historical analysis and local-level empirical study can most equitable and effective policy recommendations be made. However this research illustrates both concepts of equity and effectiveness are social constructs that can be located in the shifting paradigms of water management.

Some ecologists support Harper's ascertainment with their vision that power should reside in citizen control at the local level and thus the region, town or village becomes the chosen locus of political action. "They see the planet as a whole rather than the nation state alone, as the ultimate object of social and political transformation. This vision of political struggle is coupled with a preference for small-scale economic development" (1993, 113). Roussopoulos therefore concludes that most ecologists resist technocratic solutions and mammoth projects. He adds that "the dominance of the state diminishes the sense of individual responsibility, which coupled with an excessive dependency on the state undermines sustained collective action"[11]. He observes that "civil society is resultantly relatively weak imposing an extra burden on any political movement that seeks to form partnerships with various citizen associations". In his view "ecologists are guided by the idea of a dynamic evolution towards a new social order, in contrast with the old left conception of revolution as a sudden break" (1993, 111-16). He also notes "some new strands of ecologists sought to transform the social order by strengthening civil society through collective mobilisation and by weakening the far-reaching grip of governments they envisioned and worked towards the development of direct democracy by promoting citizen action at local level "(Roussopoulos 1993, 103). This type of vision appears to have filtered through to less industrialised countries via various channels, such as aid workers and

[10] NGOs and donor agencies encourage community participation as a way of improving project sustainability and method of measuring community support for a project. The Government gave the poor standard of service offered by Local Authorities as one of the reasons for public sector reforms and commercialisation of the water sector in Zambia.
[11] Dominance refers to the centralised decision making by the state.

programmes, focusing on local level community action and community management of resources.

Increasing individual responsibility that presumably results in the strengthening of civil society requires capacity, which can be developed or revealed if it already exists. State control of resources is prominent in relatively young independent countries like those in Africa where the state focuses on nation building as opposed to individual responsibility. It has socialist tendencies and an impact on citizen action and organisation of civil society. An alternative approach is the form of weakening of states by Governments relinquishing their duties to provide for their citizens. It allegedly results in a shift of power centres from the Government to society or the organisations building the capacity within a society. These actors encourage local populations to manage their own resources especially those that may not be considered strategic by the Government.

1.2 Natural resources and the environment

The scalar level at which natural resources should be managed continues to be debated in various fora and media. Political Ecology favours the local level of resource management drawing from various theories: common property theory, materialism theory, hydraulic society theory and the dependency theory (Robbins 2004, 43-51).

The common property theory is based on the understanding that most natural resources are traditionally managed as common property; the benefits of use can be accessed by a communal group as opposed to privately owned resources (Robbins 2004). Ostrom (1990, 2-6) explores the evolution of institutions for collective action using "the Tragedy of the Commons" (Hardin 1968), the prisoners dilemma from game theory and "the logic of collective action" (Olson 1965). Olson is criticised for the economic theory and rather narrow focus of his research (Ostrom 1990; Sandler 2004). His central point was that "large or latent groups have no tendency voluntarily to act to further their common interests but small groups especially those fortunate enough to have an independent source of selective incentives organise or act to achieve their objectives" (Olson 1965, 165). Ostrom argued the issue of size and concluded that traditional management systems that are based on a local scale can thrive and operate effectively. Her analysis is based on institutional economics which she applies to build principles of institutional design. Sandler (2004, 11) suggests prescriptions of collective action, such as Ostrom's, hinge on six primary consideration of group size, group composition, rules governing interaction, the strategic nature of interactions, the participants underlying information and the sequence of interaction. He further adds the interest in the last three is driven by political economy's interest in strategic behaviour. Mosse (2003, 16) contrasts the traditional wisdom theories from the institutional economic theories arguing that both promote models that divert attention from wider politics of resource management, particularly water in irrigation schemes. The traditional management systems draw heavily on the social capital of the local group. The possible failure of the systems was linked to individuals seeking personal benefits while externalising the costs to the group (Ostrom 1990). The potential and evidenced communal gains outweigh the personal benefits in most communal property regimes particularly considering the

long term relationships built around them. This research examines the collective action in community managed water schemes for domestic and irrigation water.

Robbins summary of the materialism theory draws heavily on the work of Marx and Engels in relation to the industrial revolution (2004, 46)[12]. The main focus was environmental degradation and how this phenomenon was linked to the capital accumulation through the process of industrialisation. In Robbins' view "they placed the contemporary class struggles in the framework of changing production patterns and their impacts on society. The resulting critique of their ideas was the investigation of relationships between nature and society; the impacts of society using nature and the transformations in society itself". The relationships were not uniform in all locations, leading to a focus on local scalar level.

Robbins (2004, 48) bases the hydraulic society theory on work by Wittfogel who, he concludes, proposed the use of political structures in solving problems of production. The state theory was applied to argue for the control of large scale projects such as irrigation infrastructure and is linked to national security and identity. "The centralised bureaucracies that resulted were more easily justified in communist states as opposed to the capitalist west that promoted private property". The hydraulic mission is part of the modernity theory based on the spread of capitalism and the belief plus desire to control nature[13]. It was contested by the green movement which questioned the elements of risk in the mission.

The dependency theories attempted to explain the concentration of poverty in the less industrialised countries; placing the root cause in the historic and contemporary trade agreements (Robbins 2004, 50). They explored the focus on primary materials in the less industrialised countries, imposed on them by the industrialised nations that maintain control over the more valuable industries and products. One of their basic conclusions was that external actors had become too dominant in domestic policy making (Bauzon 1992, 42; Olivier de Sardan 2005, 47). Their application should not be confined to the analysis of trade agreements and royalties but extended to the analysis of their resultant psychological contracts held by local citizens of the less industrialised countries. The IFIs and donor countries encourage these countries to thrive for a share in the world market.

The psychological contracts result in a set of expectations by the citizens from their national governments. The citizens of the donor countries and the officials in the IFIs who deal with the less industrialised countries hold a different set of expectations. The contracts influence the decision making of the actors. Local populations expect indigenous rule to produce better conditions for them after gaining independence from the colonial governments. Advocates of dependency theory suggest that the suffering and deprivation in the colonial period is blamed on foreign rulers who disappear from the national arena but continue to maintain control at the international level (Ramirez-Faria 1991, 197-198). Most of the actors at the grassroots are not aware of this

[12] Materialism refers to the empirical world of actual human activity especially the institutions created, reproduced or destroyed by the activity.
[13] The hydraulic mission refers to the mobilization of water resources, improving security of supply, usually seen to be undertaken to support social and economic development.

continued control[14]. They view national policies as a direct responsibility of the Government and its agencies. The fact that the policies are either a reaction to activities at the international level or imposed by external players remains invisible at the grassroots. The apparent invisibility does not erase the displaced role of the Government but presents an opportunity for researchers to explore the overlying levels of decision making and the appropriate scale.

1.2.1 Scale and boundaries

Natural scientists usually adopt a wider scale in decision making based on physical boundaries. Increasingly their models for water management advocate for international cooperation using basin or catchment levels. Their perspective is supported by economists who also create models containing elements of risk and uncertainty for the management of resources. Management typologies include the state, the community, private entities and the individual. State management is bureaucratic and hierarchical (Migdal 1988, 20). Decisions are made at a central level and directives sent to lower levels. In community management a resource is controlled by an identifiable group of interdependent users who are usually able to exclude outsiders. Private management involves a commercial entity that usually has legal rights to manage the resource. Private property is usually managed individually within a household or organisation. In all systems of management the actors declare their interests and are formally known as stakeholders. However, for the purposes of this research they are all actors.

The formal declaration of interests qualifies the inclusion of some in models where natural environments are simulated to determine critical loads and capacity levels[15]. Their selection is usually at a level that excludes other actors with interest and limits participation; concentrating the decision making in a few powerful actors. In projects, stakeholders are usually selected by the financiers and the facilitators, a process endorsed by IFIs and donor agencies. The tendency to exclude local actors results in the criticism of this selection process, especially its legitimacy in the management of natural resources such as land and water whose use and productivity is often politicised. Both land and water are factors of production and essential for species survival. Man is undoubtedly the more dominant species overriding decisions that benefit other species. Most ecologists, social scientists and the concept of global citizenship advocate for the inclusion of a wide variety of actors in the decision making process. They suggest other species apart from humans be given consideration if not priority in the use of natural resources. However elements of ambiguity are present in this consideration.

Land and water are represented in various ways by users and researchers. Representation is inclined to rhetoric, discourse and policy documents or statements. Policy makers usually use it to legitimise processes and policy applying productive logic and promoting potential benefits. If a project team installs a multi-purpose water

[14] While working the mines on the Copperbelt province the researcher recalls shop floor miners refusing to believe the mining sector in Zambia was undergoing financial difficulties. They constantly proclaimed it was impossible for the mines to have financial problems since as a workforce they were producing copper and cobalt every day.

[15] Critical load and capacity level are quantifiable amounts beyond which value a model loses stability potentially resulting in disastrous and irreparable effects on the environment.

point in a community, all members are potential beneficiaries. They expect the benefits to be more broadly spread but the often highly concentrated adverse effects are inadvertently or consciously omitted. The grass root actors are more immediately and directly affected by the access modalities, allocation and use of the resources. These modes of appropriation are inextricably linked especially because they occur at various levels. In this research we explore the various representations of water resources in Zambia. The representation of resources usually concurs within a management typology. Thus in community water projects, the water resources are viewed as a common good while in the urban centres where residents pay for treated domestic water, it is predominantly viewed as an economic good.

Access to clean and safe water for domestic purposes is a common topic in international discourse. One of the targets in the globally agreed Millennium Development Goals (MDGs) is to halve the number of people with no access to clean water by 2015. It officially contributes towards the reduction of poverty levels but also participates in the various modes of resource appropriation such as representing water using a particular knowledge framework of the actors setting the targets. The state actors have the responsibility of determining how the targets can be achieved at a national level. The regions lagging behind in meeting the MDGs are Sub Saharan Africa (SSA) and South East Asia. According to the JMP, in SSA the lagging behind is due to conflict and political instability, high rates of population growth and the low priority given to water and sanitation[16]. In a wider context, increasing access to domestic water supply and improving water resources management are seen as catalytic entry points to help less industrialised countries fight poverty and hunger, safe guard human health, reduce child mortality, promote gender equality, manage and protect the natural resources (UN Millennium Project Task Force on Water and Sanitation)[17].

The MDGs are flagged up as being built around a shared understanding of what human beings owe one another and being informed by principles of fairness, justice and the obligation of the individual to pursue the mutual good that characterises religious and ethical systems all over the world. The shared principles are adopted in the affirmation of the right to water in General Comment 15 from the Committee on Economic, Social and Cultural rights of the United Nations Economic and Social Council. “The right to water is indispensable for leading a life in human dignity and is a prerequisite for the realisation of other human rights. It entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses” (UN ECOSOC 2002).

The basic right to water is unfortunately not guaranteed for all citizens especially those in the rural areas and the urban poor. In the urban areas the economic value of water usually overrides the human right to water and results in the urban poor being deprived of their basic human rights because they cannot afford to pay for treated water. This raises questions about who should ideally be responsible for providing water to the deprived groups especially those in the urban and peri-urban centres. A

[16] The Joint Monitoring Programme (JMP), a partnership between UNICEF and WHO, included these reasons in its report. It looks at the progress made by individual countries and regions towards meeting the MDGs.

[17] However some authors may argue this is a form of neo-colonialism that gives IFIs and donors decision making control over water resources in less industrialised countries.

conflict emerges in the management method applied in these areas and the end result desired by the water provider, usually a commercial utility.

1.2.2 Economics of water

In this research the value of water is encountered in several predominant representations, cultural, social and economic. The distinguishing features of these valuations may not always be clearly defined. However for the purposes of this research the cultural value relates to ceremonial and traditional practices that use water resources such as sacrifices, rites and divine practices. The social value relates to the domestic uses of water and subsistence agriculture uses. The economic value relates to uses for which a price is paid such as industrial use, commercial farming or treated water supply. The valuations imply various water management methods that are influenced by the group of users and type of use.

Allan (2004) proposes five water management paradigms. The first paradigm is associated with pre-modern communities which had limited technical and organisational capacity[18]. The second paradigm is that of industrial modernity based on the enlightenment project and exportation of the hydraulic mission to the less industrialised countries. The third paradigm is inspired by environmental awareness and the green movement which mainly affected the allocation of water resources to agriculture. The fourth paradigm is inspired by economists drawing attention to the economic value of water. The fifth and contemporary paradigm recognises the importance of political processes in water allocation and resource management. It focuses on the hydrological cycle and promotes Integrated Water Resource Management (IWRM). IWRM brings together the concerns of the green movement, economics and the decision making processes. Allan's fifth paradigm is dominated by basin level management of water resources, bringing together national and international actors across territorial boundaries. It however, continues to be inspired by the economic valuation of water.

The IFIs spearheaded the classification of water as an economic good in the early 1990s. The economic value of water is also promoted by the donor agencies supporting projects and programmes in the water sector. The Dublin principles from the International Conference on Water and the Environment (ICWE) also supported this classification[19]. Most water laws in the less industrialised countries have complied with the principles which also form the basis of the African Water Vision 2025. Global networks with interests in water including the World Bank, the World Water Council and the Global Water Partnership classify water as an economic good because of its importance as a production factor in the broadest sense and its scarcity (Savenije 2001). Water also has cultural importance and can be viewed as a social good. Its importance as a cultural or socio-economic good varies according to the society and the time, depending on the specific historical background, cultural

[18] The use of the term pre-modern has been criticised by several authors in the context Allan uses it. He links the term to pre enlightenment without necessarily giving an in depth discussion of this period. He states it was prior to engineering capacity, science and investment initiatives of the state and private sector. His statement overlooks the traditional organisational capacities of communities.

[19] The ICWE had over 500 participants including government-designated experts from 100 countries and representatives from 80 international, intergovernmental and non-governmental organisations.

heritage, extent of fresh water availability and the socio-economic conditions of the concerned region (Abu-Zeid 1998).

Water is usually considered a free gift in the earlier stages of socio-economic development and access to shared water appears uncomplicated (Jobson 1999)[20]. Population pressure increases and socio-economic development presumably necessitate more active water exploitation. When all available water resources have been mobilised, the costs of further development and management of resources increase rapidly. In the latter stages of development, emphasis is placed on allocative efficiency (Jobson 1999, Biswas 1997). The institutions carrying out the social control over water in a non- industrialised society usually seem invisible to the adherents of classical economic development. This is often due to the fact that these institutions are embedded in non- monetarized economic production processes (Trottier 1999).

Various professionals in the water sector such as economists, social scientists and engineers deploy greatly varying knowledge frameworks to interpret the economic importance of water. The main argument for the economic classification often results in debates for the appropriate pricing of water and the role of markets. Savenije (2001) concludes that water is not an ordinary economic good when we consider its characteristics: essential, scarce, fugitive, part of the hydrological system, bulky, non-substitutable and complex good. The combination of factors makes it a special good.

The economic value of water follows the concepts used in the neo-liberal development agenda. IFIs and donor agencies encourage less industrialised countries to remove subsidies from public services like water supply and to increase private sector participation in the provision of services. They expect the removal of subsidies to reduce the financial burden on the government and increase end user participation in meeting the cost of service provision. The benefits of the agenda are unequally captured mainly by the industrialised countries resulting in a continued imbalance in global economic power.

1.3 Power relations and constructs

The control of resources whether natural or financial, implies the use of power. The controller needs to convince the resource users of the legitimacy of his control and the users also need to accept it. The responsibility that accompanies control extends to the allocation of the resources. In an ideal form it includes accountability for decisions made and transparency of the criterion used. The rules and regulations for resource use can be implicit or written down and codified. Implicit rules and regulations are associated with customs and cultural uses of natural resources (Ostrom 1990, 30-33). The focus on customs is one way of constructing the control of resources based on communal benefit. However this benefit is evidently not captured equally by all community members.

The community as a term often loosely defines an arena where various actors will compete or cooperate in the use of a natural resource[21]. The cooperation or

[20] This implies a belief in linear development theory and is a hypothesis considering Hammurabi's code (the first written code of laws in human history) explicitly addresses the control of water resources and price to pay if any damage caused can be traced to careless behaviour of the controller.

[21] An arena is a space in which real conflicts between interacting social actors occur around common stakes; it occurs within a local space (Olivier De Sardan 2005).

competition can potentially be maximised by identifying the actors in the arena, each with particular interest in the resource that are not always mutually exclusive. The identification and interaction of actors provides opportunities for collaborations among them, which changes the influence of various actors and the power they possess to place their interests above those of others.

In the field of natural resources management some practitioners perceive the state as the most powerful actor. Its dominant position is endorsed by international organisations and institutions (Migdal 1988, 12-14). These actors view it is able to manage resources for the common good of society and the citizens. Trottier (2004) traces the legitimacy of the state as the dominant water access regulator to the 1930s, particularly the construction of the Boulder dam in the United States of America. The investment made by the state was defined as furthering national interests in line with the hydraulic mission, which Allan (2005) identifies as the second paradigm in water management. Local populations are expected to support national interests as opposed to local or personal interests[22]. The state may have a holistic approach in the management, allocation and control of resources but as an actor, it also puts its interests above those of others.

The outcomes of particular decisions such as the building of a dam and arguments put forward can often be analysed with hindsight. Most large projects usually have a sense of inevitability which usually obscures debate around alternatives (Garb 2004). In Long's view "this compounds the challenge in analysis: to identify and characterise differing actor practices, strategies and rationales, the conditions under which they arise, how they inter-lock, their variability or effectiveness for solving specific problems and their wider social ramifications" (Long 2001, 21). The strategies and rationale of the actors are not always explicit. Most documentation surrounding a large investment by the state is classified and closed to public scrutiny particularly in most post colonial states. The state often legitimises its actions by claiming nation building takes precedence over other interests that the citizens may have.

Migdal (2001, 23) presents a model of the post colonial state in the state-in-society approach. It focuses on process rather than conclusive outcomes and points researches to the process of interaction of groupings with one another and with those whose actual behaviour they are vying to control or influence." The dynamic process changes the groupings themselves, their goals and ultimately, the rules they are promoting". He adds that "like any other group or organisation, the state is constructed and reconstructed, invented and reinvented, through its interaction as a whole and of its parts with others. It is not a fixed entity; its organisation, goals, means, partners, and operative rules change as it allies with and opposes others inside and outside its territory". He concludes that the state continually morphs and its related alliances with other groups and organisations have impacts on the policies drawn up and the decisions made in the control and allocation of natural resources.

[22] In Zambia, building the Kariba dam that supplies electricity to the urban populations and industrial centres can be classified as part of the hydraulic mission. The dam was built in the early 1950s and local populations were displaced with a promise of compensation. However, this compensation has not been fully realised and development projects in the resettlement areas have not brought the intended benefits to the local populations. Incidentally these matters are raised mainly during political election campaigns.

The image of the state rests on the notion of two stable boundaries, territorial borders and the separation between the state and other social actors (Migdal 2001, 17). The exact boundaries may vary even though the formal lines on maps remain unchanged; the meaning attached to those boundaries in the image of the state may be challenged in a variety of ways[23]. In post colonial states some social actors are not local citizens, which sometimes affects their legitimacy in decision making. However the distinction between internal and external affairs becomes rather hazy when external intervention is an integral part of national development and planning. Crehan (1997, 78) further adds that the political discourse associated with the modern state, has at its heart a citizen who is linked to the state and to others through a series of contract like relationships that define a set of distinct and bounded rights. In most post colonial states the rights remain undefined and often allegedly challenging to secure.

The state as an actor is usually swayed by the interests and productive logic of actors such as commercial farmers, traditional leaders and corporations. These usually predominant actors seem easier to organise and appear homogenous as opposed to the heterogeneous society. Migdal (2001, 49) depicts society as "a melange of social organisations rather than a dichotomous structure. Various formations, offer individuals strategies of personal survival and for some, strategies of upward mobility". He notes that "individual choice among strategies is based on the material incentives, coercion of organisations and the organisations use of symbols and values concerning how social life should be ordered. These symbols and values either reinforce the forms of social control in the society or propose new forms of social life. Indeed this struggle is ongoing in every society. Societies are not static formations but are constantly "becoming" as a result of these struggles over social control" (Migdal 2001, 50). The actors identified in this research are not always aware of the forms of coercion applied by the dominant actors. These deserve further investigation especially because of their impact on individual choices and strategies deployed by actors; both are pivotal points in this research. Organisations formed around the community water schemes offer incentives to their members. They are dynamic and influenced by changes in membership and the environments. Each user deploys strategies as an individual actor and as part of the group to ensure access to resources and to prioritise his needs above those of other actors. The rationalities applied in selecting the appropriate strategy can be analysed using the local narratives. This analysis requires an actor based perspective (Long 2001).

In the actor based perspective Long (2001, 15) aims to find room for: "a multiplicity of rationalities, desires, capacities and practices including those associated with various modes of instrumentalism[24]. The relative importance of these ideas, sentiments and ways of acting for shaping social arrangements and for bringing about change, can only be assessed contextually. They depend on a host of interconnected social, cultural, technical and resource components". The actor based perspective uses a grassroots approach to illustrate the power and knowledge of some of the so called weaker actors (Long 2001, 12). The notion of weak and powerful actors introduces

[23] Actual physical boundaries that demarcate borders are disputed by local residents living along them especially as they lack any symbolic feature other than at border posts.

[24] John Dewey coined the instrumentalism theory describing an extremely broad pragmatist attitude towards ideas or general concepts. It regards scientific theories as tools or instruments for predicting and achieving practical ends.

the concept of hierarchy in the control of natural resources. Hierarchy is by no means a set pattern. It has no single prescription for all arenas.

1.3.1 Hierarchy

Hierarchy is affected by factors such as the type of resource, culture, custom and legitimacy. The hierarchy accepted in Zambia's urban areas for the control of water resources is stipulated in the Water and Sanitation Act (1997). A water supplier exists and has the authority to draw water from a natural water source, supply the water to consumers and demand payment from them. A regulatory body monitors the water company within a formalised framework. In the rural and peri-urban areas, a separate hierarchy exists. In rural areas it is influenced by the legitimacy and authority of a traditional ruler, the customs and personal beliefs of the various water users and the type of water source. A natural water source usually has an open and implicit pattern determining the uses; all users can obtain water for their needs without restrictions. A borehole on the other hand can only be used by residents of a particular village who abide by set rules.

The formalised hierarchy is usually perceived as a western idea introduced with the social processes where property regimes have changed over time from communal to private (Al-Nims 2004, 38). However, it exists in traditional beliefs and cultures particularly in the warrior tribes but is less centralised in non warrior ones like the Kaonde. In her anthropological study of the Kaonde people, Crehan (1997, 48-53) includes a story to demonstrate the role the naming of reality plays in shaping the political and economic landscape within which actors struggle and how the naming of the landscape locates them in particular ways. She uses the emergence of the Kaonde as a "tribe" to illustrate how "certain ways of seeing the world and certain names, are able to achieve such a degree of authority that even those who challenge them are likely to frame their challenge in terms that accept their basic assumptions". Mamdani (1996, 16-22) draws similar conclusions in his work based in east Africa. He observes that tribes were often created on the basis of territorial contiguity as villages were brought together within an administrative authority. "Chieftainship was manufactured and chiefs imposed; if marginal men who were likely to shift alliances at the sight of a more powerful invader could not be found, they were brought in from the outside".

The manufactured culture and chieftainship served a particular purpose. However, some cultures existed as formalised hierarchies before the colonial days but were taken for granted and perhaps could not be articulated to an outsider[25]. The legitimacy of a leader or a decision maker is dependent on his acceptance by the affected group. If it is taken for granted or considered informal, it is unlikely to be challenged unless the process is triggered in some way[26]. Informal hierarchy exists in households and spills over into communities where male elders often hold positions of responsibility. A community member's age, gender, kinship and social networks are primary determinants of the position held in one's community. They have roots in the culture and custom of the group. Matrilineal tribes place more emphasis on female elders

[25] The lack of articulation in a foreign language should not be used as a dismissal of culture and custom. This is an example of the power and exclusivity of language.
[26] One such trigger would be questions raised by an outsider or a local member that may disagree with a decision.

compared to patrilineal ones, both types of tribes exist in Zambia. Age is a symbol of wisdom accrued from experiences.

The legitimacy of the various types of hierarchy is usually introduced in the representation of a resource and its allocation. During the years of urban development in Zambia, the state departments planned the expansion of water services through the Local Authorities. They set up water departments with technical staff to manage and operate the treatment and distribution networks, thus legitimising the technocratic influence on urban water development and management. The increase in the demand for treated water in urban areas reportedly resulted in a perception of water as a commodity that users should pay for, especially if it was brought to their households. The perception promotes a view of water as an economic good. The water users are known as consumers and water is a good for which an 'appropriate' price should be paid. Representation of resources and needs by individual actors draws attention to the multi-perspectives. Peet and Watts (1987, 10) suggest "one must accept 'plural definitions, plural perceptions and plural rationalities". However, competition sometimes results from this multiplicity and plurality.

1.3.2 Marginalised Actors

Bryant and Bailey (1997, 40) link the competition over resources and the power deployed to control access to resources to a marginalisation of weaker grass root actors. It often leaves the latter vulnerable to periodic changes. They also simultaneously link it to a highly unequal distribution of costs and benefits associated with emerging environmental problems such as the weak or marginalized actors being especially hard hit by the costs. The more powerful actors are able to capture any benefits disproportionately.

Bryant and Bailey add that "most grassroots actors relate to the environment in complex ways reflecting a multiplicity of material and cultural interests as well as the variation of local ecological conditions. Powerful actors often seek to impose a new political and ecological order overriding existing local patterns of human environmental interaction" (1997, 44). Local communities are not consulted before the new political and ecological order is introduced. This lack of consultation and inclusion of the local community provides grounds for resistance. Bryant and Bailey further argue that "the ability of weaker actors to resist stronger ones often arises because it is very rarely the case that one actor possesses overwhelming power over all other actors. As a result, in the relatively fluid circumstances that are associated with multiple power centres, weaker actors are often well placed to assert interests compared to more powerful actors" (Bryant and Bailey 1997, 45). In their view the state has come closest especially in former socialist countries to hold formal monopoly on the means of coercion in society. They acknowledge that even here the potential monopoly rarely puts the state in a position simply to impose its interests at will. Its actions are conditioned by its relationship to other actors both inside and outside the country.

The state monopoly is usually legitimised by the belief that it seeks public interest. However, it rarely ensures equality in the distribution of resources. Consultation of citizens is sometimes perceived to be a timely and costly venture, thus ideas are imposed. As a result some citizens resist the changes, especially those who are likely to be further disadvantaged. In view of this, the state constantly shifts between

promoting ownership and acting for the common good[27]. In Zambia's water sector it is an actor at various levels. It usually partly finances projects and directs practices through policy and guidelines at the district level and the community level through its agencies or representatives during project implementation.

1.4 Interfaces between the arenas and levels of analysis

The analysis of the control of natural resources in this research is focused on the community, district, and the national scalar levels. The community can be defined in various ways such as using administrative boundaries. In this research its definition is considered fluid and determined by its members. This implies multiple definitions which in this research will be limited to a group using a particular natural resource such as a borehole or a well. Most communities have more than one borehole at their disposal and individuals usually choose the nearest in terms of distance. Sometimes the water quality in a particular well may be considered better by the users, hence they are willing to travel further distances. The various factors determining the choice of water source compound the fluidity of communities (Discussion Chapter).

A district has administrative boundaries set by the Ministry of Local Government and Housing (MLGH) using provincial and national boundaries. Most national boundaries are not as rigid as they appear on world maps but in this research the case studies chosen did not include areas close to the borders. The demarcations of the Zambian national borders are still under negotiation in some regions particularly to the east where some local tribes were separated.

The interfaces between the scalar analysis levels are constantly shifting according to the actors and processes within them. The role at the interface is well defined in some cases such as in development work where a development broker or agent possesses that role. He deals with the project financiers or the facilitators while also relating and interacting with the community or the target group for the project (Discussion chapter). The actor possesses dual roles in separate arenas relating with the actors in each one while also applying their own influence and interpretations in the process. The role at the interface of development brokerage is one of negotiation and realigning of the perceptions and expectations of actors in each group.

The actors at each level have various degrees of influence depending on numerous factors such as the main traditional water uses[28]. An urban community has some different water uses to a rural community such as watering of lawns and filling of swimming pools. The urban and rural divide is also influenced by the individual actors. In the urban locations, most actors can be included as individuals. In rural and peri-urban areas the community appears more important as a whole than the individuals that comprise it and identify with it. On the national scale however the individual loses his significance and would have more influence as a group of actors based on the same use of water such as domestic users or small scale farmers. The groupings potentially results in cooperation among some users. If competition for resources exists then collective action is built on to restructure the concentration of

[27] Ownership of resources would result in limited state control but, if this situation does not suit the strategy of the policy makers, resources are returned to state control through various projects and regulation.

[28] In a community, the individual has greater influence than at the district and national scalar levels.

power (Finsterbusch in Dobkowski and Walliman 2002). The factors that affect the choice of a water source differ according to the location of the user and the arena[29].

Using the earlier defined levels we will later explore the interfaces between them while acknowledging that they do not always exist as discrete entities but continue to morph according to both internal and external influences (Discussion chapter). Internal influences include individual choices and relations while the external ones include economic changes, policy and regulation, project implementer mandates and the logic of the project teams. The influences not only affect the parameters of the specified levels but also the dynamics within them, the social patterns. Long (2001, 13) notes that "the social patterns that emerge result from the interactions, negotiations and social struggles that take place between several kinds of actors, not only those present in a given face to face encounter but also those who are absent yet nevertheless influence the situation, affecting actions and outcomes". They are also affected by environmental factors, which are usually external especially to an individual. He phrases the problem for analysis as "understanding the process by which external interventions enter the lifeworlds of the individuals and groups affected and thus come to form part of the resources and constraints of the social strategies and interpretive frames they develop". This is the internalisation of external factors and adaptation by the local actors, which is often overlooked and not analysed or incorporated by the project implementers and other dominant actors.

The interfaces between the arenas allow us to bring together individual strategies and decision making, national and community level planning, global drives and policy implications and project implementer mandates. The actor strategies are manifest in various ways at each level. The actor usually aims to benefit from interaction with other actors and actants. Competition for water resources is localised requiring a community level analysis.

1.4.1 Competition among the users

One of the aims of this research is to explore the strategies being deployed by various actors in the Zambian water sector to ensure access to water. The definition of access used in this research goes beyond physical access which refers to a visible source of water that can be reached by various water users. It includes decision making over water sources. The water source can be natural or infrastructure dependent. However, access to infrastructure or the ability to reach this infrastructure does not automatically imply the availability of water. In some cases the water is not readily available at a tap or in a borehole. The use of the water may also be constrained by the quality of the water. All these factors have to be considered in the definition of access to water.

National figures showing access to safe and clean water in Zambia depict a contrast between the urban and rural actors. The rural residents have lower levels of access to safe and clean water[30]. They are also generally seen as weaker actors who are not able to be heard or are not valued by the state, which often allocates the resources for

[29] The factors and their weights are discussed at length in the main discussion chapter of the technical report.

[30] See methodology chapter included in the technical report.

infrastructure development in various locations. The analysis of actors illustrates what makes them weak or strong. It assists in a move towards equity in the allocation of resources and access to the resources. Various studies show that equity and economic efficiency cannot always be achieved simultaneously[31]. The decision maker usually chooses the more important one. In the context of a push towards economic development the policy preference route will be closer to economic efficiency.

The route of economic efficiency in the use of resources does not necessarily mean equity is abandoned. A balance can be reached to ensure the weaker actors have access to their basic needs. However, their definition can be manipulated (Olivier de Sardan 2005, 85). An individual is often able to articulate their basic needs but these will not necessarily be viewed as basic by other actors. Therefore basic needs are constructs by various actors. One can however, be convinced to conform to standards especially with technology and consideration of the common good. According to the JMP, extensive rural research found that people satisfy their basic needs for water if the source can be reached in a round trip of 30 minutes or less[32]. If the trip takes more than 30 minutes, people typically haul less water than they need to meet their requirements particularly where water resources are considered scarce [33].

1.4.1.1 Local Constructs

The constructs of power and scarcity bear heavily on the representation of resources and the narratives of the actors. Game theory posits that each actor will deploy a strategy to ensure they gain from an interaction with another actor[34]. The gain may not necessarily be in terms of material but could be knowledge, insight, emotions etc. A gain for one actor does not necessarily result in a loss for the other actor but could imply a combined loss that is less optimal. In the era of barter and trading in goods, each actor obtained goods in exchange for other goods. In the same vein of gaining from interactions researchers obtain insight, knowledge and information from the groups they research.

Long (2001, 20) states that "knowledge, like power, is not simply something that is possessed and accumulated, nor can it be measured precisely in terms of some notion of quantity or quality. It emerges out of processes of social interaction and is essentially a joint product of the encounter and fusion of horizons". He adds that "it must therefore be looked at relationally and not treated as if it could be depleted or used up. Knowledge encounters involve struggles between actors who aim to enrol others in their "projects" getting them to accept particular frames of meaning and winning them over to their points of view". In his view power has an individuality aspect at the lowest level of interaction between two actors. This however must be related to the scale. At the national level the definitions of power and influence of an actor refers to a particular group or actor succeeding in promoting his view at the risk of silencing others.

[31] Dinar, A., Rosegrant, M.,W., Meinzen – Dick, R. (1997); Saleth, R., M., Dinar, A. (2000)
[32] The basic needs for water include drinking, cooking, sanitation and hygiene. Estimates for the daily requirement amounts vary between 20 and 40 litres person (Gleick 1998).
[33] The JMP produced a report in 2004 on the progress made towards meeting the MDGs titled "Why meeting the Targets matters".
[34] Game theory is used to predict strategies deployed by various actors in a given situation. It is however, based on rational choice theory, some of which are disproved in this research.

The researched communities usually intend to gain from the research carried out in their areas. The gains usually depend on the research and the researcher. They can be material, for instance, research assistants from the community earning an income. They may be in the form of knowledge or sharing of experiences and culture. The community plays a role in the research process; it is not always objective and neutral. They are often aware of the possible gains they can secure from the researcher in the long and the short term. Just like the researcher gains from the research, they also devise ways in which they can do this, sometimes through the narrative presented and indeed the representation of a resource in a particular area (Crehan 1997). The narratives are constructed to maximise the potential gains individually or as a community. A researcher may spend extended times in a community but the notion of an outsider being present continues. The community and their leaders want to present themselves and conduct their affairs in a particular way influenced by the outsider's presence[35].

1.4.1.2 Culture and custom

Most culture and custom in Africa is passed on in narratives from the older members of a community. Certain aspects of culture that are taught to children during the formative years are often taken for granted and not necessarily articulated by the older members. In some African traditions it is considered rude to be too inquisitive as a child and ask too many "why" questions; the authority and legitimacy of a traditional leader is accepted by most subjects[36]. The articulation of culture and customs implies naming and labelling. It is also useful in distinguishing the members from other groups. This is usually necessary and mainly for the benefit of the outsider of a particular cultural group. The members take their culture and customs for granted as daily tasks and part of them as individuals. The outsider would like to understand their daily actions in his own framework of thought.

The framework of thought of the outsider sometimes determines what can be included as custom and as culture. The constructs of culture and custom are convenient smoke screens for the beliefs of an individual. In the African context, though individual thought and beliefs existed, less focus was placed on the individual and more on the community or tribe. Crehan (1997, 51) notes "a hegemonic, taken-for-granted assumption within the British colonial world was that the basic social unit within which rural Africans lived was the tribe. African communities were named and theorized as tribes. This allowed conformity in the behaviour of individuals and ability to control them by pointing out what the community or tribe believes or ways in which members conduct themselves". Mamdani concurs with this idea of tribal fixation adding that the tribal culture was however elastic and highly textured (Mamdani 1996, 292). The individual has become the focus of research in the post structural era bringing about the emphasis on constructs of culture and customs.

[35] This experience in research is elaborated on in the methodology chapter of the technical report.

[36] In the Bemba tradition in which the author was raised there is a recollection of being told to take the adults or elders on their word and not question their judgement. This was usually explained in a parable that translates into English as: "an elder does not miss words in terms of advice or judgement but they are likely to miss harm or danger"; because of their wisdom.

The narratives of the community often conform to a desired portrayal of it. The members apply strategic and productive logic particularly when relating to an outsider[37]. The former is usually unspoken though it has a significant bearing on the decision making by most actors (Trottier 1999, 160). The latter is usually explicitly stated by most actors and is viewed as easier to accept. The application of strategic logic seems to imply a win-lose situation whereas productive logic implies a win-win situation can be found[38]. It appears self-centred whereas the productive logic appeals to the common good. However strategic logic is usually the basis for most decisions though it is rarely acknowledged[39].

1.5 Defacto decision making and power play

The previous sections on power, hierarchy, constructs, natural resources and the environment are encapsulated in the four facets of Political Ecology; politics, economics, society and the environment. They culminate into a framework of the decision making process in the field of water management. The political aspect also deals with the policies adopted and implemented by the Government and other local organisations that may be predominant in the field. The historical evolution and the route to reaching the status quo in any location are affected by the political realm. The economic aspect also includes macro and micro economic situations that allow or hinder a particular management patterns or policy implementation. Society reacts to the policies and the environment in a variety of ways that will be explored in the case studies.

The factors considered in decision making cover all four sectors. Not all of them apply to every case and in some cases a factor may cross over two sectors. The challenge in each case is to identify each factor and how important the local actors consider it to be. These are the elements of decision making that will be explored further in the case study chapters and the discussion chapter of this research. The elements build on the framework illustrated below. The decision making framework applies to water management, access and the use of the resource.

[37] The narratives serve a particular purpose for each community member. Community members advocating for water projects present narratives of the suffering caused by the lack of services in their locations. When pricing of water is discussed they present themselves as a homogenous poor group that is dependent on external intervention.

[38] This conclusion is based on the transparency of the logic. Productive logic favours the open staking of interest even though it excludes some actors and prioritises particular needs.

[39] This assertion is made by Faggi who Trottier cites in her work where she explores the use of productive and strategic logic in Palestinian water management.

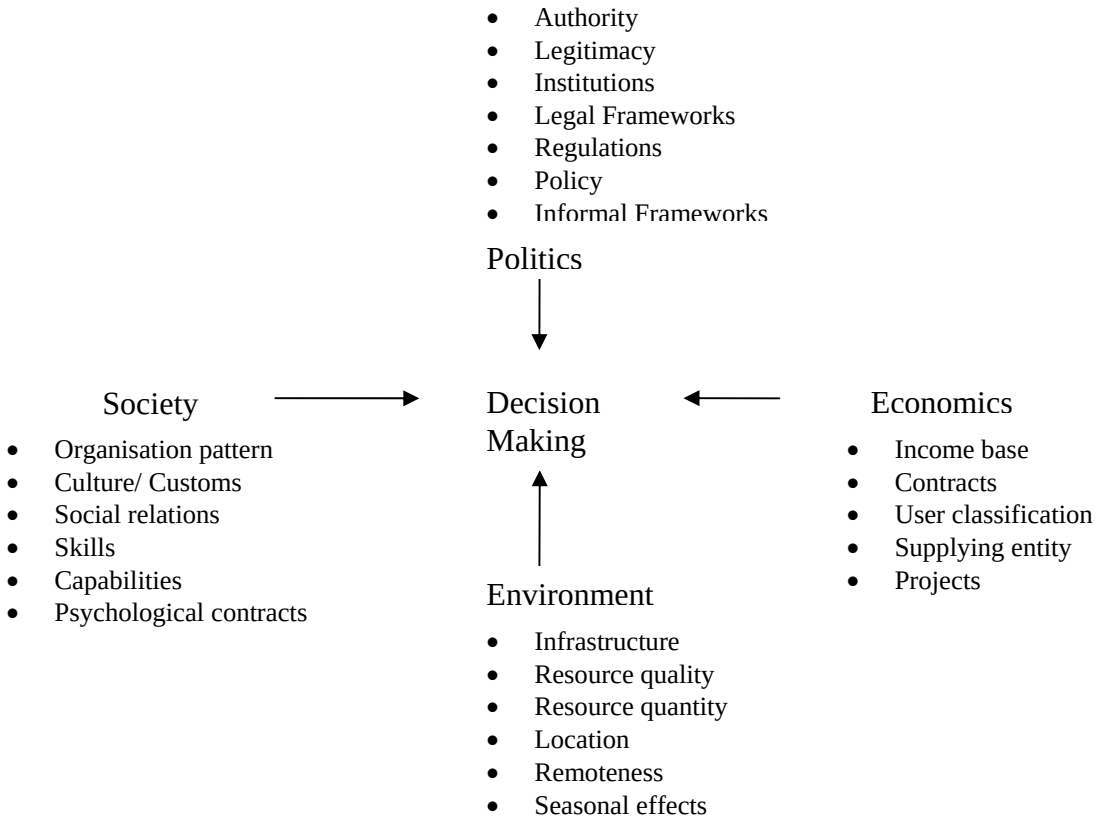

Figure 1.1 Decision Making Framework

1.6 Conclusion

This chapter presents an actor oriented Political Ecology framework for analysing the use and management of natural resources. It lays out some of the main themes in the environmental identity and social movement thesis, which include: power relations, hierarchy, marginalisation, constructs and multiple representations. We develop these themes further in the chapters that follow.

The themes relate to each facet of Political Ecology as summarised in Figure 1.1. The environmental and social identity thesis is biased towards society and how its dynamics are affected by the economic, political and environmental shifts. It focuses on who, where and how when addressing social upheaval (Robbins 2004, 14). It emphasises political and social struggles using basic livelihood struggles and environmental protection. This research focuses mainly on the social responses and basic livelihood struggles, encompassing access to water resources. The environmental identities of the local actors are manifested in these struggles and responses. However even though the society maybe our focus the Political Ecology framework allows us to reveal the reciprocal relationships between the four facets.

In the following chapters we will explore the economic changes at various stages of the Zambian state. The changes are triggered by a variety of factors and influence the national policies and water management strategies of the actors. We will analyse some of the local responses to these changes and their impacts on the grass root activities. We will also trace the changes in the political atmosphere and their resulting impact on policies and inherently the water management strategies. The

political changes incorporate changes in expectations and the psychological contracts of the local actors. We examine these resulting changes and responses from the actors. The environmental changes are also examined and located in their context of their impacts on society and its impact on them. The natural environment is affected by the activities of a society and often the resulting adverse effects are unforeseen by the actors. The actors have to adapt to these changes and sometimes link the cause to outside intervention and their own reactions to these.

The main point illustrated in this research is that the changes in all facets of Political Ecology are influenced by external and internal agency and occur in a field where they are able to support or contend with existing structures. The next chapter introduces the actor analysis in the Zambian water sector and provides a context for the current state of affairs building on the decision making framework illustrated in Figure 1.1.

2 Historical Context

The current predicament of the Zambian water sector is influenced by the contemporary and historic polity. Analysing its chronological evolution allows us to comprehend better its organisation and decision making processes. This enables us to critique the dominant management approaches as they have evolved. The existing water sector emerged during the colonial era when the economic activity expedited the development of towns. The opening up of full scale mining activity in the late 1930s pre-empted state involvement in the sector. Prior to this, local migrating tribes settled close to the water bodies they used; the natural availability of the water determined the settlement patterns. This chapter illustrates the lasting impacts of the mining activity on the management of water particularly on the Copperbelt Province. Mining affected the settling patterns and increased demand for domestic water through the workers it attracted to the growing urban centres.

Commercial farming located mainly in the Central, Lusaka and Southern Provinces affected the water management practices in these areas. The historical process detailed in this chapter traces the establishment of these farms, which resulted in some of them being located in the more drought prone southern part of the country. The farms supplied the urban markets with food and later expanded to export crops. Commercial farming is concentrated in the Kafue river basin, which has the highest water demand. The continuously increasing demand is recognised in the National Water Policy (NWP), which is based on the Dublin Principles and the economic valuation of water. The NWP classifies water as a scarce resource referring to affordability of domestic water and quality of natural sources. Incidentally, the dominant groups at specific points in time appear to determine the social construction of scarcity. The dominant groups and historical processes also resulted in dual forms of law, one serving the urban populations and the other the rural populations.

This chapter details the evolution of the Zambian water sector. It first examines the colonial administration and the effects this period had on natural resource management. Traditionally a village headman was responsible for the affairs of the village assisted by an advisory council. He mobilised male community members to dig a number of traditional water sources such as wells depending on the size of the village. Residents living in the vicinity of the well were responsible for its maintenance and the surroundings. The colonial government recognised the role of traditional leaders and identified the headman and his council as the bottom tier in their centralised hierarchy. The colonial era is followed by an examination of the post-independence years and Zambia's three phases of a republic. The second republic was a one party state system. The economic situation varied in the separate stages of the republic as a result of macro economics and the policies adopted by the government. In the post-independence era we only pay attention to the changes that may have affected the water sector and the management of other natural resources. We examine the effects of Humanism, the early political ideology, and the liberalisation of Zambia's economy on water management. We analyse the progression of the water sector reforms and the attempts to improve access to domestic water. An administrative and physical description of Zambia and an analysis of the water

institutions and legislation in the country are also included. The chapter ends with a review of the judicial system that covers both customary and common law.

2.1 Chartered and Protectorate Years

Zambia is a landlocked country sharing its borders with eight neighbours in South Central Africa. It is a member of the Southern Africa Development Community (SADC) and other regional economic bodies like the Common Market for East and Southern Africa (COMESA) [40]. It is one of the most urbanised countries in the region with a relatively low population density. Zambia is gifted with many natural resources and on the international arena is mostly famous for its minerals especially copper and cobalt. It has a fairly good distribution of water resources, including several lakes and rivers (Appendix A). It is also partly the home of one of the largest man made lakes and one of the Wonders of the World, Lake Kariba and the Victoria Falls respectively.

Zambia gained independence on the 24th of October 1964. It was previously known as Northern Rhodesia and was initially administered by the British South Africa Company (BSAC) from 1889. It later became a British protectorate in 1924. The BSAC was granted a Royal Charter by the British government on condition that it extended a railway from the south over the Zambezi River, which forms part of the southern boundary between Zambia and Zimbabwe (Greenwood and Howell in Tordoff 1980, 163).

2.1.1 Chartered Years

The BSAC administration was focused on claiming territory and expanding the area within the company's jurisdiction to exploit the mineral wealth as had been done in what is now South Africa (Tordoff 1980; Hall 1965). It had little regard for the needs of the local populations and was solely driven by the possibility of mineral prospects as well as the race for territorial claim ahead of the rival groups. The Portuguese were advancing from the east and west coast, while the French and Belgians were advancing from the north through what is now the Democratic Republic of Congo (DRC).

2.1.1.1 Concessions

The chiefs of the various tribes of Northern Rhodesia were mostly tricked into signing concessions that they rarely understood with an offer of protection from one sovereign state or another depending on which explorer reached their territory first (Kay 1967, 15; Hall 1965). They also promised various types of investments which included the eventual arrival of envoys from the British crown. The targeted chiefs were those of the warrior tribes or the leaders of notably the Bemba, Lozi, Chewa, Ngoni and Lunda people. These chiefs controlled most of the tribes within their surrounding areas and were the gate keepers of the territory[41]. The handsome promises made by the

[40] SADC member countries include: Malawi, South Africa, Tanzania, Democratic Republic of Congo, Zimbabwe, Namibia, Angola, Mauritius, Seychelles, Botswana, Swaziland, Lesotho and Mozambique. COMESA member countries include: Kenya, Egypt, Malawi, Sudan, Burundi, Comoros, Eritrea, Ethiopia, Democratic Republic of Congo, Lesotho, Tanzania, Namibia, Angola, Mozambique, Swaziland, Seychelles, Uganda, Zimbabwe, Djibouti, Madagascar and Mauritius

[41] The leaders of the warrior tribes were revered by leaders of the smaller tribes who were less established. Traders in the area would identify the warrior tribes and develop relationships with the leaders to gain access to the territory.

explorers in the treaties with various chiefs remained unfulfilled but the chiefs were held to their side of the bargain (Hall 1965, 95). The BSAC did not believe it needed to build up the role of traditional leaders in the local administration. It made use of the authority of the leaders as and when the need arose. This policy had the effect of preserving the outward form of the traditional systems while undermining the authority of the chiefs as they became dependent on the various administrative officers located near their chiefdoms (Hall 1965, 103; Mamdani 1996, 54).

Before the full scale operation of the Northern Rhodesia mines, the various tribes of the territory lived on subsistence agriculture and had little need for monetarised systems. The main demand was the tribute paid to the chiefs usually in the form of crops or other produce. Agriculture involved a form of slash and burn for the tribes of the northern part of Northern Rhodesia (Tait 1997, 180)[42]. The burnt trees provided nutrients for the soil and crops. After a few years "when inputs to increase the fertility of the soil were depleted, the chiefs sent out a team of young men to search for a new site for the tribe to migrate to" (Hall 1965, 97). The territory still had vast open spaces where the various tribes could relocate. Those who lived by the lakes and rivers were notably fishermen and would sometimes travel to other villages and use the barter system to sell their catch[43]. The tribes of the southern part of Northern Rhodesia practiced subsistence farming and cattle rearing[44]. The latter was limited to those areas that were not infested by tsetse flies. Evidence of "small scale copper mine operations exists in some parts of Northern Rhodesia, the local populations would use the copper crosses for paying bride price or buying produce" (Hall 1965, 249).

2.1.1.2 Charter Administration and Development

Most chiefs signed concessions with the notable exception of the Lozi king who preferred to be protected by the British crown and not the BSAC charter. The company did not identify any mineral ore bodies in the first few years, thus the chiefs and their populations were largely ignored. It discovered mineral bodies in the early 1900s but only mined them on a large scale after Northern Rhodesia was transformed into a British protectorate. After the handover, the BSAC still retained the rights to the mineral prospects. Until the mines became operational in 1929 the numerous tribes of Northern Rhodesia largely remained in the regions where they had settled. Extensive migration was undertaken by those who ventured to work in the mines already operating in present day Zimbabwe and South Africa.

In the initial years of the Charter, the BSAC introduced the idea of representative local government with the establishment of a village management board whose main duty was to administer regulations. The board dealt with what would now be called environmental health and the construction and maintenance of streets and buildings. It was the pattern of administration throughout the years of the BSAC administration (Greenwood and Howell in Tordoff 1980, 163). The BSAC also imposed a hut tax to raise money to pay for the costs of the administration and to drive men to provide labour in the mines and farms in Southern Rhodesia and further south (Hall 1965,

[42] This system is known locally as the Citemene system.
[43] Fishermen usually came from the lakes in Luapula Province which borders the Northern Province or from Lake Tanganyika near the border with Tanzania.
[44] Cattle rearing is still practiced in Southern Zambia by the Ila and Tonga tribes. The practice has also spread to the Eastern, Central and Western provinces

96)[45]. However, the hut tax was payable whether one had an income or not. Those without an income paid in kind by performing tasks assigned by the village headman or using food harvests. The headman collected the tax contributions from his subordinates and paid the collectors from the colonial government (Tait 1997, 171).

The development of towns in Northern Rhodesia started during the BSAC administration even though the classification of towns occurred after the handover. While building the railway from Southern Rhodesia, the engineers established sidings at various intervals[46]. Small communities began to develop at these points as farms in the area created shops for selling their produce (Greenwood and Howell in Tordoff 1980, 164). The first town was Livingstone, which also became the first capital of Northern Rhodesia. Lusaka became the capital in 1935.

The BSAC handed Northern Rhodesia over to the British government just after the First World War, a period of recession. Like many other companies, it found itself in financial crisis at that time. It pointed to financial difficulties in the first three decades of its administration of Northern Rhodesia as a reason for keeping administrative costs to a minimum and not implementing a territorial development program (Hall 1965, 95). At the time of the handover of administrative powers, Northern Rhodesia was reportedly a neglected territory, mainly used as a source of labour.

2.1.2 Protectorate Years

The British rule was indirect in nature. The imperial powers encouraged the local populations to run their own affairs. The indirect rule meant some of the traditional leadership was incorporated into the colonial administrative structure (Mamdani 1996, 54). The incorporated leadership was strategically selected to maintain the presence of the colonial government in the rural areas without officers. "The British Imperial power would stay while it could, impart what it felt was good for the indigenous people and then retire gracefully – but keeping her trade after the flag had been lowered" (Hall 1965, 103). The indirect rule was only applied in the rural areas as it was found to be inappropriate for the urban areas. "The early administrators usually set up their boma close to a chief's village and demonstrated a type of remorseless power that the chiefs and their subjects were not familiar with" (Hall 1965, 96)[47]. They also attended to the problems associated with the developing urban communities. They passed a Municipal Corporations Ordinance in 1927 which was followed by a Townships Ordinance in 1928 (Greenwood and Howell in Tordoff 1980, 163) [48]. The Water Act was passed in 1949. This is the act that forms the basis of all water legislation in Zambia (Appendix B). Water was associated with the land on which it was found and as such the land owner or tenant controlled the access and its use.

[45] Coal mines were already established in Southern Rhodesia, now known as Zimbabwe
[46] A siding is an area set aside at strategic locations along the rail line making provisions for repairs and stops for the trains and related machinery.
[47] The boma was an administrative centre.
[48] These were designed to reinforce the intended return to home areas by the African workers.

2.1.2.1 Early Settlers

When the mining operations began many white settlers migrated from the south, attracted by the newly opened mines in the north and the higher wages on offer[49]. The wages attracted the settler labour force as the north was known to be infested with diseases such as malaria. Industrial activity was limited to the line of rail built from the southern tip of Northern Rhodesia at Livingstone up to the Copperbelt, the region where the mineral ore had been discovered (Tait 1997, 160). No other reliable forms of transport were in place and the mines were the centre of the economy. Most of the settlers who migrated from the south were of Boer origin. Sometimes tension developed because the settlers wanted to be independent from the British or London centralised control and decision making (Bates 1976, 68-70; Sklar in Tordoff (ed) 1974). The tensions later resulted in a call for independence from the British government and eventually the formation of the Federation of Rhodesia and Nyasaland, initially instigated by the settlers.

In an effort to keep the indigenous populations out of the newly developed towns, workers in the mines were hired initially for six months and thereafter sent back to their village with a blanket and enough money to travel back home (Epstein 1958). The indirect rule remained effective during the initial years of what is sometimes termed as the wage economy that was a result of the hut tax and the opening up of the mines. The poor transport network meant that the early work force had to travel on foot to their various destinations. “The senior officers of the provincial administration perceived the local populations as subsistence cultivators and members of kinship – group and tribe. They considered the towns as a place of temporary residence where men came to work for a short while before returning to their land, family and chief” (Epstein 1958, 34).

The potential income offered by the mines and the need for resources to pay the tax increased the internal migration in Northern Rhodesia though this was initially limited to the male population that could work in the mines[50]. Labour was also required for the mines in the south. Development outside the line of rail was still non-existent because very few if any of the white settlers lived in these regions. The population was still below three million and tribal groupings had enough natural resources in terms of animals, land and water at their disposal (Kay 1967). The water source that the tribes settled near provided for a limited number of gardens along the banks or in the dambos. Most of the residents depended on rain fed agriculture, which enabled more land use for their subsistence farming. They stored dry foods for the periods between the harvests.

2.1.2.2 Land Distribution and Use

The colonial government usually displaced the local populations living along the line of rail if the need arose to make room for the white settlers who were miners and commercial farmers. The settler’s land in Northern Rhodesia was initially distributed by a British resident who was South African by origin and was sent to Northern Rhodesia as an envoy after a request made by some local chiefs (Hall 1965, 95).

[49] The “south” here refers to the region beyond the southern border of Zambia.
[50] The tax paid varied and was lower in the rural areas, calculated according to the distance from the line of rail. Urban residents paid a higher tax (Epstein 1958, 88).

During the development of the industrial activity, the rest of the territory was still left largely untouched apart from the recruitment of mine labour. The local populations in the rural areas continued to live in their traditional lifestyles of subsistence farming, hunting and cattle rearing.

Commercial farming in Northern Rhodesia first started in the eastern part where the headquarters of the BSAC were strategically situated to enable the recruitment of labour from Nyasaland and Northern Rhodesia. The centre of commercial farming shifted to the line of rail after the mines on the Copperbelt began full scale operation. During this transition, the farmers in the eastern region switched to specialised cash crops such as tobacco that could withstand the high transport costs (Bates 1976, 22).

The mines of Northern Rhodesia and the Katanga region of the DRC were the largest buyer of farm products; they provided some supplies for their employees. In an effort to promote the commercial enterprises, the BSAC and the colonial government legalised the alienation of land to highly capitalised producers with freehold conditions (Tordoff (ed) 1974, 7; Bates 1976). This increased the security in farm investments. The rest of the country was left with conditions of native tenure. The local population considered the duration of its leasehold too short to warrant major investments (Bates 1976, 23). However a later study by Mvunga (1978) revealed a difference in the value of land; for local people, productivity of the land held more value than the asset of land itself. The European and Boer immigrants invested in large scale farms[51]. The area around the line of rail was also at an advantage due to little or no incidence of tsetse flies. This pattern determined the concentration of the farming belt in the southern part of Zambia which is also known to have higher incidences of drought and water shortage compared to the northern region. The location of the farming belt would probably have been different if the line of rail had originated in the west or east. The west had problems of security and international relations in the 1970s after Angola's independence and the civil war that followed.

2.1.2.3 Development of Towns and Services

Infrastructure development in the Copperbelt towns was obligatory for the mining companies. The colonial administrators acknowledged they did not have the resources to provide for the influx of labour in these towns (Tait 1997, 163). The companies built homes for their work force and provided services for the townships[52]. They determined the pace of the development of services. Water, electricity, roads and sanitation were their direct responsibility through their professional and technical staff (Greenwood and Howell in Tordoff 1980, 166). This explains the existence of the mining and non mining townships with multiple water and sanitation reticulation systems within one town. The mine workers and their families predominantly resided in a mining township. Workers in other sectors such as the public service lived in the non mining townships.

[51] This study was the subject of Mvunga's PhD thesis at the University of London. A further study on agricultural investment concluded the investment policy and capital lending conditions favoured the white settlers with title to their land (Amankwah and Mvunga, 1986). Commercial banks still maintain the policy of lending money only to farmers with title deeds.

[52] The development of towns on the Copperbelt Province is thoroughly documented and analysed by Kazimbaya- Senkwe in a PhD thesis (2005) that focuses on the social constructs of water access in the mining towns.

The Local Authorities in the urban centres worked on the principle that African communities in the areas controlled by the urban council had to be self-supporting. They provided beer halls whose profits were used to provide social services and welfare facilities. A Native Welfare Committee was responsible for allocating the funds (Epstein 1958, 18). The town manager, who belonged to the colonial administration, was assisted in his duties by compound police and a body of tribal elders that had legal powers over the native population even though their jurisdiction rested mainly on the voluntary submission of parties to their arbitration. They had no power to impose fines for criminal offences but, even with their limited authority, they claimed more moral clout than the members of the urban court (Epstein 1958, 59). The colonial administrators made up the court. The position of tribal elders was initially created as a link between the compound manager and the African populations in the mine compounds. The colonial administrators selected elders from the larger tribes to represent smaller ones (Epstein 1958, 27). The elders used a system of customary law while the urban courts used a common law system [53].

2.1.2.4 Effects of Migration

The internal migration and the need to earn hut tax drove men to the mines on the Copperbelt and further south and led to an awareness of the differences in the living conditions between the rural and urban populations (Tait 1997, 171)[54]. The local populations expected their conditions to be worse than those of the settler communities; a belief handed down by the colonial administrators. The rural areas had no mineral wealth and were still neglected until the years when the population started demanding racial equality and similar living conditions. This struggle no doubt started in the Copperbelt region where racial division was most explicit[55]. The general trend of events evolved from the struggle for equal wages and living conditions to one of freedom from colonial rule (Hall 1965, 112). A more western educated group of local Northern Rhodesians could now negotiate with the colonial rulers in their language and terms they better understood.

2.2 Federation Years

Before independence a federation merged Northern Rhodesia, Southern Rhodesia and Nyasaland now known as Zambia, Zimbabwe and Malawi respectively. During the federation decade (1953 to 1963), Northern Rhodesia was the most neglected of the three territories in terms of development (Tordoff 1980, Bates 1976). Nyasaland had the advantage of a larger number of educated locals. Southern Rhodesia had the advantage of being the headquarters of the Federation; thus in the initial years the mining firms in Northern Rhodesia moved their headquarters to Salisbury[56]. These

[53] The two systems of law are discussed in later sections of this Chapter.

[54] According to some elderly members of the Bemba tribe and part of the researcher's family, any headman that did not pay the colonial government stipulated tax was disciplined accordingly by the authorities. The discipline varied from physical manhandling and verbal abuse to prison sentencing with hard labour. Some headmen avoided meeting the authorities sent to collect taxes and others refused the appointment of headman because of the responsibility it entailed.

[55] This marked the start of an influential role of mine workers and the trade union movement in the politics of Northern Rhodesia and later Zambia.

[56] Now Harare, the capital of Zimbabwe.

firms provided most of the revenue which was used to develop and build infrastructure in Southern Rhodesia, which had a larger settler community. The disgruntled settlers of Northern Rhodesia followed those in Nyasaland in breaking away from the Federation with the view of achieving independence from Britain. The settler community still believed in their superiority and were determined to form a government with only symbolic representatives of the local population (Bates 1976, 67).

Reportedly the scanty programmes of rural development started during the Federation were unsuccessful. At the time of independence, the Zambian government was determined to develop the rural areas[57]. This was the start of the Zambian ideology of Humanism: a man centred ideology in which men are valued as human beings and not according to their economic position and power[58]. Kenneth Kaunda, the first Zambian President, was intent on this ideology and wanted the standard of living for all Zambians to be equal (de Gaay Fortman 1969, 1)[59]. In Kaunda's view, humanism was a way of life combining capitalist, socialist and populist strands. It sought to create a just and equitable society with the rural standard of living raised to the urban level, a society where one man's wealth was not another man's poverty (Tordoff 1980, 24). It formed the basis of the independent government's rural development strategy since its formal adoption in the early 1970s. Kaunda was influenced by the Pan African movement and leaders such as Nyerere and Nkrumah. He sought to make a mark on African politics. However the timing of the ideology also had an impact on its acceptance, ideally it combined good practice from other ideologies like capitalism and socialism. The leaders in the newly independent state were probably looking for a basis for their future paths and Humanism provided this. Kaunda also used it to defuse the tribal tensions that were manifested in the membership of the dominant parties just before independence. The United National Independence Party (UNIP) had a country wide following but was dominated by the tribes from northern Zambia where Kaunda originated. The opposition party, National Party (NP), was dominated by the southern tribes, mainly the Lozi and Tonga. Humanism encouraged Zambians to view and treat each other as equals and view themselves as human beings first without reference to tribe, race or economic status.

The key events in the pre-independence years are summarised as follows:

[57] The new Zambian government was known locally as the people's government; it was elected by the people for the people.
[58] Man in this case refers to mankind and not the male species.
[59] Kenneth Kaunda did not view Humanism as an ideology that presented a given set of ideas which enabled people to interpret life without thinking. Humanism had to be understood. It demanded that Zambians look into their own society and think of how the dangers of an invading money economy should be faced.

Table 2.1 Key events in the Pre-Independence Years

Year	Event	Determinants	Responsible Body	Effects
1889	BSAC awarded exploration rights	Territorial competition from Colonising powers in Europe	BSAC and British government	Mineral exploration and building of railway from Livingstone to Copperbelt. Origins of first towns in Northern Rhodesia
1929	Mining activity begins in Kabwe before spreading to the Copperbelt	Mineral ore bodies found in region and investment in mining equipment from Colonial government	BSAC and Colonial government	Increase in rural to urban migration compounded by mining activity and wage economy necessary to pay hut tax introduced by Colonial government
1935	Public Health Act enacted	Safe guarding the health of the urban populations that were mainly white settlers working in the mines	Colonial government and Local Authorities	Local Authorities empowered to monitor health standards including water quality for domestic use
1949	Water Act enacted	Formalising the use of various water bodies. Demarcating access and entitlements to water resources.	Colonial government Department	Surface water was classified as a public good unless contained on a private holders land. Ground water was classified as private good based on investment to bring it to the surface
1953	FDI formed	White settler pressure to dissociate from London as the central decision making office	Colonial government and neighbouring colonial governments	Increased inequality between white settler areas on the Copperbelt and in other mining towns like Kabwe
1963	FDI dissolved	Increased pressure from local populations, trade unions representing African workers and the attainment of independence by some African countries.	Trade Unions, British government	Local populations were more visible in demanding equality and the renewed desire to gain independence.

2.3 Post Independence Years

In political terms, “humanism was to be achieved through a participatory democracy; involving the people in the day-to-day running of the government. The Zambian government pledged to combine tolerance and free discussion with responsible leadership” (Tordoff 1980, 25). The proclamations of Humanism can be viewed as a way of involving the population in decision making and thus placing their future in their own hands or ensuring the wealth of the state is used for their benefit. Reportedly, the Zambian government realised that for this ideology to be appreciated, the gap between the rural areas and the urban areas that had been created during the BSAC and Protectorate years would have to be narrowed.

2.3.1 Post independence Development Programmes

The initial line of rail was the most industrially advanced region of Zambia. The high copper prices in the years just after independence up to the early 1970s provided

revenue for the government to implement some rural development projects. Some of its key objectives in the first development phase were: to develop a productive African agricultural sector, improve the living conditions in the rural areas, urban construction, service provision and manufacturing (Tordoff 1980). This included the provision of services such as water and electricity in the expanding urban areas. Most of the population still resided in the rural areas. The planners apparently sacrificed the return on investment for the benefit of the larger population. However, an analysis of the development programmes revealed the urban areas had received more resources than the rural areas (Hamalengwa 1992, 61). The second phase of the development plans focused on rural development and the need to promote industry and agriculture simultaneously (Tordoff 1980, 26). The targets set in this phase and the resources available proved to be unrealistic and as such the results were unfavourable[60].

The development programmes introduced in the 1970s were capital intensive and heavily dependent on foreign aid both financially and technically. In the end they were abandoned and in 1977, President Kaunda launched a programme of "Production for oneself and export through the country" (Tordoff 1980, 27). This was a form of cooperative farming initiated in 1965 and appeared to peak in 1969. However it was observed that the cooperatives mainly benefited the local economic and political notables rather than poor peasants. The parastatals created at the same time reportedly siphoned off resources from the rural poor for the benefit of the urban consumer (Hamalengwa 1992, 60-63). It goes beyond the scope of this research to look at the economic implications and effects of the failed development projects. Suffice to point out that the development programmes were started at a time of world wide economic hardships following the oil crisis of 1973. Other factors included the falling copper prices in the mid 1970s and political aspects in Southern Africa that resulted in some export routes being blocked.

Internally in Zambia, the political representation from all provinces and the limited resources of the government meant competition for the development inputs. The President, who made most of the decisions, was keen to please the various regions and show that independence meant using the resources of the country on the local population and for their benefit. However, this practice set up a network of trustees and loyal supporters in various parts of the country. Consciously or unconsciously, Kaunda established a politically beneficial system of clientelism (Kotecha and Adams 1981). Apart from the drive to improve the standard of living in the rural areas, no other distinct changes occurred in the administration of the rural and urban areas. The segregation between urban and rural areas that originated from the policies during the colonial era was maintained after independence. The Local Government Act (1965) that covers local administration in Zambia made no clear distinction of the peri-urban areas. The areas within the jurisdiction of the rural councils were based on the former native authorities, which did not include urban or peri-urban areas. The peri-urban residents had access to the urban councils but were not obliged to pay property rates as required of the urban residents (Mamdani 1996, 138-145). The classification of urban and rural areas in Zambia depends on proximity to administrative centres and

[60] The manufacturing industries set up in the provincial centres required large capital investment. The transport for the raw materials and operating costs tended to be higher than expected and skilled labour was not readily available.

population density in an area. An area declared rural has an established council to run its affairs[61].

2.3.2 Post Independence Administration

Zambia is a large country covering 752 614 sq Km[62], with an estimated population of 10.3 million in 2001[63]. For political and administrative purposes it is divided into nine provinces namely the Copperbelt, Lusaka, Northern, Southern, Eastern, Western, Central, North Western and Luapula Province, see Figure 2.1. Each province has several districts. Each district has a council where most decisions are made at the local government level. According to the 1990 census, of the ninety-two urban centres, over seventy were classified as districts, three were classified as city councils and nine were classified as municipal councils. In the 2000 census the number of districts had been increased by three and the number of cities had gone up to four.

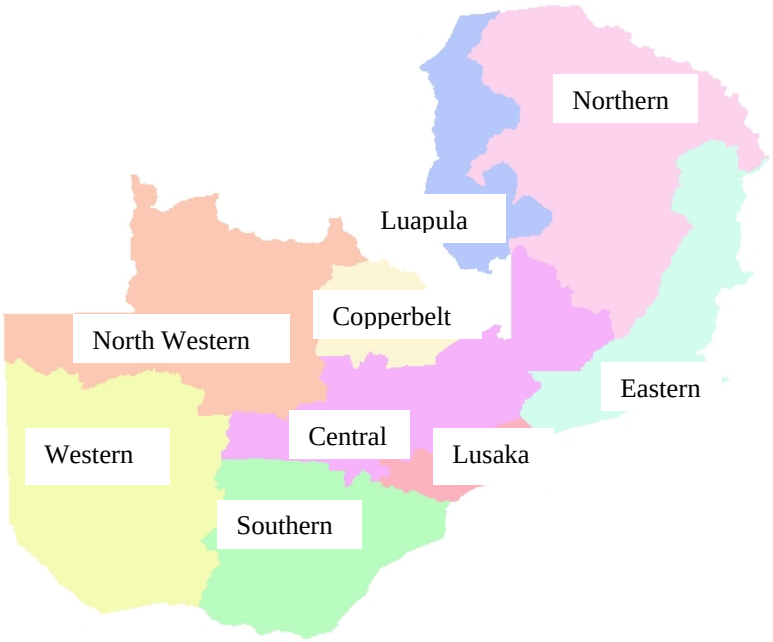

Figure 2.1 Provinces of Zambia

The provincial administrative framework is inherited from the colonial days. The independent government decided to maintain these centres as decentralisation points and convert them into instruments of economic development. Political representation was sent to each province with reportedly no clear distinction between party and government representation; Zambia was, by the early 1970s, a one party state. The lack of distinction resulted in conflicts of interest. In a bid to prevent tribal segregation, Kaunda sent representatives from various tribes to areas where they did not originate. However the intentions of unity and preventing tribal segregation are questioned by some authors who conclude the policy helped Kaunda to build a clientele network in various provinces (Tordoff 1974; Ferguson 1999).

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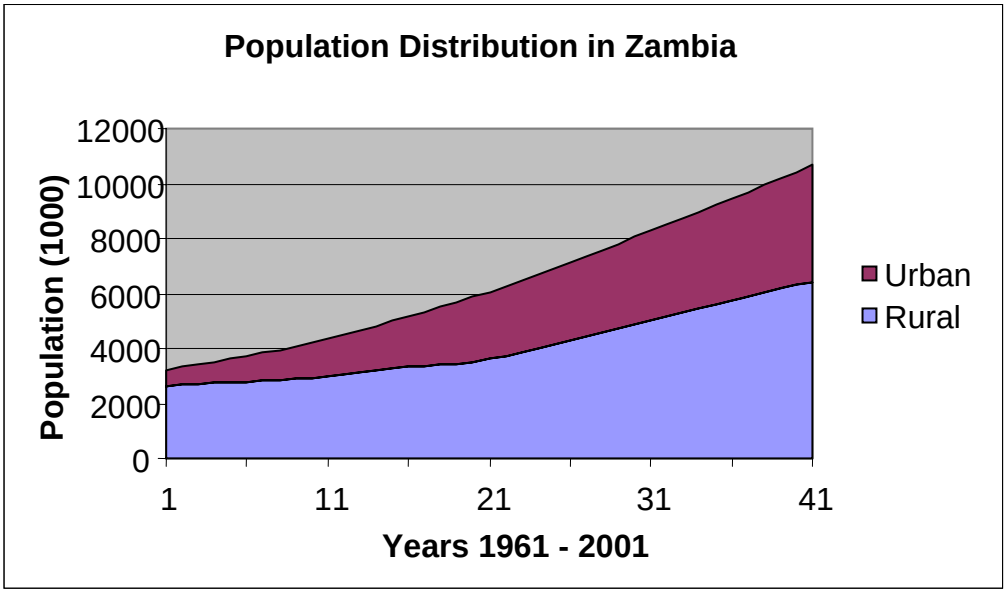
[61] Central Statistics Office, Summary Report for The Census Mapping Consultative Workshop, Elephant's Head Hotel, Kabwe, 30th November - 9th December, 1997.
[62] Source: http://www.projectzambia.org/statistics.htm (Accessed on 01/02/03)
[63] Central Statistics Office. 2001. Population and Housing Census 2000

The provincial headquarters created in an effort to decentralise central government operations while keeping integration at lower levels, are not as effective as envisioned (Tordoff 1980, 185). Taking the weak provincial institutions into account, it was beneficial from a research point of view to focus at the district level in each province, while keeping in mind the role the provincial capital should play. Each province includes more than one tribe, each with its own language. The current estimate of tribes in Zambia is seventy-three. Some of them have very similar traditions and values because of the common origins of the ethnic groups[64].

The provinces of Zambia are connected by a network of recently rehabilitated trunk and main roads, most of them paved. Lusaka remains the central point through which most of the routes can be accessed. Since the early 1960's the rural population of Zambia has continuously decreased with a corresponding increase in the urban population, Figure 2.2. The Copperbelt region attracted a lot of migrant workers, as did Lusaka. They provided a labour force for the copper mines and other industries that were developing in Lusaka. In the earlier years of mining, pre 1980s, workers generally returned to the rural areas after working in the mines (Chilivumbo 1985). During their stay in the mining towns the migrant workers supported their families by sending remittances back to the rural areas. Gradually the remittances reduced and the migrant workers settled in the towns that offered services and more developed infrastructure than the rural areas. This led to a disproportionate increase in the urban and peri-urban populations.



Source: SADC website (Accessed on 15/03/2003)

Figure 2.2 Population Distribution in Zambia

The Local Authorities created by the colonial government were adopted as effective system of management of urban areas by the independent government. They provided services other than health, education and policing that were provided on a national basis. In the colonial era, they were also responsible for these aspects though a clear

[64] Ethnicity can be defined as characteristic, distinctive cultural traits that differentiate one group from others (Bell and Freeman 1974, 10). In many instances it is contextual, can be multiple and fluid.

distinction existed between the facilities for the European workers and the so called African workers[65]. After independence, they had the powers to establish commercial undertakings, build, acquire and let property and establish transport services (Tait 1997). The Department for Water Affairs (DWA) spearheaded the development of urban water supplies. The urban district councils managed the water supply services and collected the revenue. The mining companies continued to provide services to the mining townships.

The line of rail and transportation system significantly affected the pattern of population distribution in Zambia, which deviates from the historical patterns of various ethnic groups usually settling near natural water sources. The southern part where most industrial centres mushroomed has a much larger population concentration. Contrary to water resource abundance patterns the farming belt is also located in the relatively dry south of the country. Some of the realities of urbanisation include the formation of unplanned communities and settlements. The pace of expansion of the populated areas was and continues to be faster than the rate at which services like water and sanitation are expanded in the districts. The result is inevitably different coverage levels for water and sanitation at district and provincial level, Table 1.2. The more economically advanced provinces, where most industries are located, have a higher coverage than the mostly rural provinces[66].

Table 2.2 Percentage of Households with Access to Selected Amenities by Type of Amenities and Province in the Year 2000

Residence	Safe Water Source[67] (%)	Proper Toilet Facility[68] (%)	Electricity (%)	Regularly Collected Garbage (%)
Zambia	49.1	14.9	16.7	1
Rural	29.5	2.1	2.2	2.2
Urban	86.1	39.2	44.1	6.1
Western Province	28.4	3.3	3.3	2
Central Province	43.8	10.9	11.9	1.8
Copperbelt Province	70.9	47	41.1	7.4
Eastern Province	43.6	2.6	2.9	2
Luapula Province	18.8	2.3	3	1.1
Lusaka Province	91	25.8	43	5.9
Northern Province	21	3.7	4	2.1
North-Western Province	31.6	2.9	3.6	2.4
Southern Province	58.6	13.4	12.5	4.3

Source: Central statistics Office of Zambia, 2000 Census

Despite a good relative endowment of water resources, Zambia remains a state with relatively low percentages of its population having access to clean water, Table 1.2. Clean water refers to water of drinking quality set by the Zambian Bureau of

[65] Some workers in the Zambian mines came from Tanzania and Nyasaland.
[66] The predominantly rural provinces are Western, North Western, Northern, Luapula and Eastern Province. Copperbelt, Southern, Central and Lusaka province have more industrial activity and are considered predominantly urban mainly because of their economic contribution.
[67] A safe water source includes a protected well, borehole, natural spring and a tap.
[68] Includes flushing toilets and pit latrines.

Standards[69]. Discrepancies occur in the figures for safe water though notably the levels on a national scale in Table 2.2 are of the same values as those given in Table 2.3 even though the statistics were compiled almost a decade apart. The Statistics from the World Bank and UNICEF are from 2000 and give higher percentages for safe water access, probably due to the differing definitions of access.

Table 2.3 a Percentage of Population with Access to Safe Water

Total	Urban	Rural
64*	88	48
63+		

* UNICEF Figures 2000 + World Bank Figures 2001

Table 2.3b Accessibility to Safe Drinking Water

	Total	Urban	Rural
Percentages	49	70	33
Representative Population	4.27 Million	2.59 Million	1.68 Million

Source: Japan International Cooperation Agency (JICA) Study of the Zambian Water Supply and Sanitation Sector, 1991

Presumably the study in the Water and Sanitation Sector, Table 2.3b, focused on access in terms of domestic supply without accounting for sources like self-provided protected wells or nearby protected springs. The disparities in Table 2.3 may lead one to perceive an increase in the percentage of the population with access to clean water over the last decade. During the United Nations (UN) International Decade for Water and Sanitation (1981-1990), access to "improved water sources" increased. Sub Saharan Africa (SSA) experienced an increase in water supply coverage from 32% to 46%. Sanitation coverage increased from 28% to 36% during the same decade. After 1990, progress reportedly stagnated (WHO 2000). However the 2000 census information implies a decrease in the access figures back to the 1991 levels. This may be a result of population increases not being matched by development of water supply services especially in peri-urban areas. Living patterns have also had an impact on the water access figures. The number of shanty townships mushrooming around the earlier established residential areas has increased. Some of the townships are considered illegal and thus they have no provision of services.

According to the World Bank, access to safe water is measured by the number of people who have a reasonable means of acquiring an adequate amount of water that is safe for drinking, washing, and essential household activities, expressed as a percentage of the total population. It reflects the health of a country's people and the country's capacity to collect, clean, and distribute water to consumers[70]. The UN defines basic access as having a water point within one kilometre from the household and a round trip can be made within 30 minutes[71]. The average consumption given these conditions is 20 litres per capita per day, according to a 2003 joint report by the World Health Organization and United Nations International Children's Emergency

[69] The Zambian Bureau of Standards bases the drinking water standard on the recommended WHO drinking water standard.
[70] World Bank website : http://www.worldbank.org/depweb/english/modules/environm/water (Accessed on 15/06/2005)
[71] WHO, UNOHCHR, COHRE, Wateraid, Centre for Economic and Social Rights 2003, The Right to Water.

Fund. In homes with multiple taps, the average daily consumption is 100 to 200 litres per capita. If the water source is further than one kilometre, per capita consumption drops to around five litres per day or less. Zambian families living in the peri-urban areas use approximately 15 litres of water per capita per day. The volume used is significantly affected by the distance to the nearest water point, Appendix C.

In the MDG literature, the proportion of the population with sustainable access to an improved water source, urban and rural, is the percentage of the population who use any of the following types of water supply for drinking: piped water, public tap, borehole or pump, protected well, protected spring or rainwater[72]. Improved water sources do not include vendor-provided waters, bottled water, tanker trucks or unprotected wells and springs.

The period of 1964 to the late 1980s encapsulated a paradigm shift in the access to water and hence water management. The informal access in most areas outside the line of rail where tribes had settled was converted to regulated access in some of the rural centres with installed infrastructure. The capacity of the state determined the installation and location of the infrastructure. The development of services outside the urban centres and especially to peri-urban areas was almost non existent. It partly resulted in run down infrastructure compounded by the lack of maintenance, qualified manpower and effective management of the institutions. The water reticulation systems laid down in the 1940s and 1950s were poorly maintained and by the early 1980s, large amounts of water were unaccounted for. In the Copperbelt Province, in the city of Kitwe, about 50% of the water was unaccounted for due to pipe leakages and dilapidated water treatment plants. The city of Lusaka similarly had high figures (Shewaye and Adam 1999). This situation was common in all towns of Zambia. The lack of trained manpower was mainly due to the absence of training programmes and the low pay offered by the Local Authorities compared to private companies. It had an adverse effect on the attraction of skilled human resources and management capacity. Investment in the water sector and expansion of services to areas where the services did not exist was also very poor. The poor state of affairs in the water sector covered most of the public sector in Zambia, hence the need for reform.

2.3.3 Water Sector Reform

In 1987 the Zambian government abandoned the International Monetary Fund (IMF) restructuring programme and embarked on a new Economic Recovery Programme through an Interim National Development Plan (Coopers and Lybrand 1988)[73]. One of the overall strategies of the Plan was to carry out institutional reforms to improve management and planning capacity. An objective in the Interim Plan section of the

[72] MDGs were set at the Millennium summit of the United Nations in New York, 2000 that was attended by world leaders. Their UN root projects them as international multilateral consensus and achievable targets. This conclusion is based on their targets such as halving the number of people with no access to safe drinking water and sanitation rather than striving for universal access.

[73] The IMF programmes were the Structural Adjustment programmes that had a negative impact on most African economies. Locally in Zambia they were blamed for increased poverty, job losses and down turn of the economy. Political elections were also being held close to this time and the state introduced mealie meal subsidies to cushion the effects of poverty. The IMF officials attributed the failure of the programmes to their lack of meticulous application by most African governments.

land utilisation, water development and natural resources conservation stated: "to ensure permanent supplies of water of acceptable quality"[74].

The Zambian government authorised a study for the re-organisation of the Water and Sanitation sector sponsored by GTZ (The German Government Aid body), UNDP and the World Bank. The study was part of the public sector reforms associated with the Washington consensus (Mosse 2004, 8). It was presumably driven by the IFIs and carried out by Coopers and Lybrand, on behalf of the then Ministry of Decentralisation, who published the final report in 1988. The Ministry was responsible for the administration of all district councils, approval of budgets, manpower establishments and the efficient operation of provincial and district secretaries plus the co-ordination of local government development planning. The district councils nominally managed water and sanitation schemes in their areas though in some urban and rural townships the responsibility rested with the DWA (water supply) and Ministry of Works and Supply (sewerage and sanitation). Forty-eight of the roughly seventy-nine rural and urban townships were operated and maintained by the DWA. The Social Development Department in the Ministry of Labour and Social Services was responsible for promoting self-help water and sanitation programmes in the rural communities[75].

Coopers and Lybrand made recommendations using a deductive approach applying principles they perceived to be universally good (Trottier 2005). They recommended the establishment of a National Water Authority and Regional Authorities to manage Zambia's water resources and two options for future institutional frameworks in the sector. They proposed forming a Zambia Water Resources Authority, a statutory body responsible for master planning and regulation of water, setting water quality standards and maintaining compliance. The alternative organisation was a Zambia Water and Sewerage Company responsible for providing water supply and sanitation. The study did not include areas managed by the mining companies. Notably, representatives from small urban and rural councils were missing from the Steering Committee of the Water and Sanitation sector reform study. They were seen as unable to sustain the financial and human resource conditions that would be required for the company infrastructure. The study endorsed a view that the responsibility for the development of rural water supplies from point sources such as wells and hand pump boreholes, together with appropriate sanitation facilities, lay primarily with the community. The Government could choose to provide subsidies to such communities either directly or through NGOs. The deductive approach applied in the study and the perceptions of the resulting recommendations illustrate some of the ways in which particular technologies become dominant (Latour 1997, Garb 2004). The dominant actors' recommendations are often adopted without further considerations of alternatives. The study can be viewed as the feasibility study of the water sector reforms in Zambia. It was followed by the JICA funded study that quantified Zambia's water resources (1991) and the formulation of a National Water Policy (NWP). The NWP is a strategic document that was created internally with pressure from donors and the IFIs; the programmes for water sector reform would only be

[74] Cited in Coopers and Lybrand for Ministry of Decentralisation. 1988. Reorganisation Study of the Water and Sanitation Sector in Zambia – Final Report. Sponsored by GTZ, UNDP, World Bank.
[75] Ibid p 22 -23

funded if an acceptable policy was in place[76]. These conditions are not unique to Zambia; they have been identified in other locations where states require external support for the water sector (Marvin and Laurie, 1999).

2.3.3.1 The National Water Policy

The NWP was drawn up in 1994 after a series of consultative workshops held within the NWP Development Initiative (NWPDI). The Ministry of Energy and Water Development (MEWD) that is responsible for water resource development and management undertook the consultative process. It previously provided domestic water for rural areas through the drilling of boreholes. Domestic water in municipal and city council areas was the responsibility of the Ministry of Local Government and Housing (MLGH) through the Local Authorities. The overlap of responsibility in the supply of domestic water created problems of duplication of roles and lack of clearly defined roles in the water sector.

2.3.3.2 Stakeholder involvement

The consultative workshop participants included representatives from government ministries, NGOs, donor agencies, Local Authorities, government agencies, private companies, parastatal companies and international organisations[77]. The stakeholders in the consultative process were identified by the MEWD and in particular by members of the DWA. Stakeholder consultation was driven by the NWPDI financiers who included NORAD, GTZ and the World Bank[78]. The selection of stakeholders is biased towards the mandate of these organisations. It cements the influence of the selected groups that often support their agendas and are aligned with their programmes.

The participants at the consultative workshops were divided into two groups: Water Resources Management (WRM) and Water Supply and Sanitation (WSS). The WRM workshop was dominated by the DWA, which spearheads the WRM activities in Zambia. Other stakeholders represented during the WRM workshop were the GTZ, the MoH, the MLGH, the NCSR, the UNZA, the ZESCO, the UNDP and the

[76] The NWP had to be accepatable to the donors and IFIs that would support the programmes in the water sector.

[77] The consultative workshop participants included representatives from the MEWD, the MLGH, the United Nations Children's Fund (UNICEF), United Nations Development Programme (UNDP), Zambia Electricity Supply Company (ZESCO), the German Agency for Technical Cooperation (GTZ), the University of Zambia (UNZA), the National Council for Scientific Research (NCSR), CMMU, the National Energy Council, National Commission for Development Planning (NCDP), the Norwegian Agency for Development Cooperation (NORAD), the Japanese International Cooperation Agency (JICA), the National Heritage and Conservation Commission, Interim Consultancy Group (ICG), the Zambia Consolidated Copper Mines (ZCCM), the Ministry of Environment and Natural Resources (MENR), the Zambia National Tourist Board (ZNTB), the Zambia National Farmers Union (ZNFU), Africare, the Lusaka Water and Sewerage Company (LWSC), the Lusaka City Council (LCC), the Meteorological Department, the Ministry of Education (MoE), the Ministry of Health (MoH), the Zambia Sugar Company and the Building department. These stakeholders were identified by the Department for Water Affairs. The NWP was viewed as a government document and consultation only involved major stakeholders or strategic partners. The general public and civil society organisations were not involved in the process.

[78] International aid agencies and IFIs promote selective stakeholder consultation and participation in resource management.

UNICEF. The WSS workshop had a larger cross section of participants representing the remainder of the identified stakeholders. The stakeholders' ideas and suggestions were included in the final draft of the NWP drawn up by members of the DWA.

2.3.3.3 Dissemination

The MEWD is responsible for working out a comprehensive programme of action that translates the policy into actual activities (NWP 1994, i). These include: the separation of water supply and sanitation from resource management, the creation of a national regulator for water and sanitation, adopting an economic focus for Zambia's water resources and the creation of Commercial Utilities (CUs) for urban water supply and sanitation. The NWP was drawn up at a time when donor support was moving towards project support and community participation in resource management was also being encouraged in international discourse.

The MEWD recognised the need for the evolution of a water policy that would guide developments in the conservation, management and demand and supply of the water resources in the country (NWP 1994). This was inevitable in view of the changing macro-economic environment especially the liberalisation of the economy, which occurred in the 3rd Republic in the early 1990s when Zambia became a multi-party state. The liberalisation of the economy resulted from significant international pressure from the IFIs and the donor community. Zambia was actively encouraged, through various aid conditionalities, to become part of the globalised capital economy. It turned away from the socialist principles previously used.

2.3.3.4 Roots of Policy Development

The NWP claims it promotes sustainable water resources development with a view to facilitate an equitable provision of adequate quantity and quality of water for all competing groups of users at acceptable costs and ensuring security of supply in varying conditions. The document announces its fundamental principles as equity, sustainability and cost. Equitable provision of water is not clearly defined and the determinants of adequate quantity and quality are also not identified in the document. It acknowledges that water quality requirements for various user groups are seldom the same and elaborates on the determinants of water fitness such as colour, effect on health and effect on machinery (NWP 1994, 17). Water use is divided into five main categories for the purposes of determining water quality fitness. The NWASCO regulates domestic water for urban areas. The Environmental Council of Zambia (ECZ) regulates other sectors such as industry using the Environmental Pollution Control Act.

Sustainability of the water resources under varying conditions is repeatedly mentioned but not defined in the NWP. The varying conditions cover drought and floods that are periodically recurrent in the southern part of Zambia. They also include increased competition in areas like the Kafue basin. The determinants of the affordable cost of water are also not identified. The NWASCO has to approve any proposed urban water tariffs after justification by the water provider. The NWP mentions simple and transparent water tariff mechanisms and charging consumers according to the burden they impose on a delivery system. From the consumers' point of view, acceptable cost is dependent on the standard of service received. Channels are available for consumers

to report any dissatisfaction with their standard of service. They can complain through customer services at their water supplier or the newly formed water watch groups but evidence of the impact and responses is not fully accessible.

2.3.3.5 Water perspectives

The policy document treats water as a scarce resource based on the realisation that the quantities of water available for exploitation and use at costs that are affordable to many users are limited by various factors (NWP 1994, 5). These include: unfavourable climatic conditions, uneven geographic distribution in relation to areas of demand, declining quality in some basins such as the Kafue basin, the obligation to share transboundary waters and the presence of few perennial rivers in the south of the country.

> "The Kafue basin has the potential for irrigated agriculture, hydro-power generation, fisheries, tourism and development of wetlands. The water quality in the basin is severely affected by wastes that find their way through various streams, some of which originate from leaking pollution control dams and dumps. Therefore the Kafue River serves as a sink for industrial, mining and sewage effluents emanating from major towns along its course. The mining pollutants consist of suspended solids, cadmium, lead and zinc. Industrial waste consists of tannery, fertilizer and textile effluents filter mud and oil from sugar factories" (NWP 1994, 6).

The government has stressed the need for economic growth through rapid agricultural and industrial development. Economic growth combined with the anticipated population growth is expected to increase the demand for water significantly. "Zambia could experience severe water shortages in the near future due to the localised growing demand on water for industrial and domestic use. The water shortage may be exacerbated by pollution, which will limit the use of the mobile and diminishing resource" (NWP 1994, 13).

Prior to the formulation of the NWP plans for the development of water resources to enhance hydro-power, agriculture, water supply and sanitation were prepared without any consideration of the impacts on the water sector as a whole.

> "This has contributed immensely to a fragmentation of water resources planning at national level. According to the discourse of Integrated Water Resource Management promoted by international organisations, emphasis should ideally be placed on a holistic approach to water management in which a comprehensive spectrum of demands are recognised and evaluated to assess their priority"(NWP 1994, 14) .

2.3.3.6 Urban Focus

The proposed institutions from the NWP and the Coppers and Lybrand study have resulted in the NWASCO, a statutory body with all the functions recommended in the study. The proposed Zambia Water and Sewerage Company has been replaced with CUs in the individual provinces. The study recommended a national firm after

considering aspects of coordination involved if provincial companies were set up. The CUs are monitored by the NWASCO and the Local Authorities that hold controlling equity in all of them. After the privatisation of the mines in 2000 the mining townships were catered for by a transitory firm known as Asset Holding Company (AHC). The MLGH's vision was to incorporate this firm into the newly formed CUs. It made a final decision in May 2005 to incorporate AHC into Nkana Water and Sewerage Company[79]. The Local Authorities decide the pace of formation and number of utilities created to replace them as the dominant actors in water supply at the district and sometimes the provincial level. The CUs remove the possibility of subsidisation based on national development plans and put in place a commercial model of service extension with a limited possibility of cross subsidisation.

2.3.3.7 Peri-urban and Rural Focus

Another landmark step in the construction of access to clean and safe water sources was the Brazzaville Conference of 1996 where African countries agreed to reform their national water sectors in the hope of finding solutions for themselves. It was reportedly requested by the participating countries and marked the beginning of the AFRICA 2000 Initiative that is aimed at the inhabitants of peri-urban areas and the rural areas who lack basic water and sanitation services[80]. The lack of these basic services highly exposes them to numerous health risks. The WHO Africa Regional Committee launched the Initiative in 1993 and the participating countries in the first consultative meeting in 1996 adopted the Brazzaville Declaration. This Declaration set out relevant principles and key recommendations to enable the African people to have access to safe water supplies and sanitary facilities. Its adoption was perceived as a symbol of commitment by the countries to break away from their business as usual mentality in the water supply and sanitation sector. By the second meeting in 1998, in Harare, most of the countries had successfully drawn a consensus on the convention in several ways such as raising awareness among NGOs, external support agencies and the general public. For Zambia it would not be far fetched to conclude that most reforms in the water and sanitation sector or so called improvements and extension of services are a result of international initiatives by various international institutions. The state is a weak actor dependent on external intervention. Some of the international initiatives of the last two decades are tabulated in Appendix D.

2.4 Water Legislation and Institutions

The NWP also resulted in the revision of the Water Act (1949), which is the building block of Zambia's water legislation. The act has been criticised, mainly by water sector professionals, for being outdated and focusing on surface water while ignoring the ground water resources (Phiri 1999). It classifies groundwater is as private water[81]. It is also not enforced effectively in the areas that it does cover; it does not apply to shared watercourses such as the Luapula and parts of the Zambezi and Luangwa rivers. Separate agreements exist for the Zambezi River, the Zambezi River Authority (ZRA) and the newly formed Zambezi River Commission (ZAMCOM).

[79] The MLGH made the decision after months of consultation with the AHC, other CU management and the World Bank representatives.

[80] Source: WHO/AFRO website : http://www.afro.who.int/wsh/af2000.html (Accessed on 04/03/2003)

[81] The main beneficiaries of free ground water are the commercial farmers who were dominant players during the colonial era. The classification of private water and the free hold leases on their land potentially provided incentives for commercial farming in Northern Rhodesia.

The former is responsible for monitoring the water levels in the Kariba dam which Zambia shares with Zimbabwe and is a bilateral agreement between the two countries. The ZAMCOM is far reaching; it covers all the countries that the Zambezi flows through including: Zambia, Zimbabwe, Angola, Botswana and Mozambique.

The Water and Sanitation Act (1997) attempts to complement the Water Act especially with regard to domestic water supply and sanitation. It was preceded by the Environmental Protection and Pollution Control Act (1990), which mainly addressed issues concerning the quality of water in industrial centres and other regions of the state. Other water related legislation includes The Natural Resources Conservation Act, Local Government Act, Lands Act and the Public Health Act.

2.4.1 Impact of the revision of the act

The revision of the Water Act (1949) is part of the Water Resources Action Programme (WRAP) that was started in 1999 and has a main goal of ensuring, "Zambia's water resources are being managed and utilised for maximum economic benefit in an equitable and sustainable manner with strong stakeholder participation" (WRAP Dpocuments)[82]. The participation aspects are probably drawn from the key funding bodies of the programme which include the NORAD, Irish Aid, the GTZ and the World Bank. Participation in World Bank terms is still limited to the execution stage with little input at the planning and implementation stage of the projects. The WRAP also has a focus of integrated water management and the incorporation of groundwater resource legislation in the amended Water Act. It came to a close in 2005 and recommendations have been made in various documents drafted by the team[83].

The revised Water Act includes proposals for issuing water rights for groundwater resources mainly used by commercial farmers in the Central, Copperbelt and Southern provinces. Previously, these farmers were entitled to use the water as long as it was on their land. No licences were obtained for the abstraction so, effectively, once the capital cost of drilling the borehole was discounted, the water was used free of charge. The proposed revised Act also points to the need for cooperation between individual states that share surface water resources in agreements such as the ZAMCOM.

The water sector reforms also include restructuring and realigning of the two main Ministries in the sector; the MEWD and the MLGH. Other Ministries that relate to the sector are the Ministry of Health (MoH), the Ministry of Tourism (MoT), the Ministry of Environment and Natural Resources (MENR) and the MFNP.

2.4.1.1 Realigning of government ministries

Prior to the drafting of the NWP, the MEWD managed and developed water resources and was also responsible for rural domestic water supply. The financial resources for the rural water supply and the manpower and machinery for drilling of boreholes were assigned to the DWA. The urban water supply was managed by the MLGH; the Local

[82] Accessed from WRAPO website http://www.zambia-water.org.zm/wrap/information.htm on 6th February 2003

[83] The documents drafted by the team include water demand strategies, legal and institutional frameworks and managing of the water resources

Authorities supplied water to the urban residents and some peri-urban residents. The MoH continues to monitor the drinking water quality using the Public Health Act[84]. The MFNP continues to disburse the funds used in water supply projects and related infrastructure development. The MoT and the MENR are stakeholders because resources like the waterfalls on various rivers are used as tourist attractions and also play a crucial role in the environment providing habitat for aquatic life and wildlife.

The NWP contained strategies for the separation of water supply and management roles. The MLGH is completely responsible for water supply in both the urban and rural areas. The peri-urban areas are officially part of the urban centres. The MEWD is responsible for water resource development and management and mandated to implement the NWP. After the refocusing the DWA needed to be restructured and if necessary some of the human capital and machinery necessary for rural water supply be moved to the MLGH. The latter decision is yet to be followed through. The MLGH is currently formulating a long term strategy for rural water supply. However, giving the MLGH responsibility for rural water supply implies a loss of financial resources for the MEWD. The situation between the two ministries is yet to be resolved and has adverse impacts on the sector. It results in internal wrangles between them almost to the point where the officials want to prove the visibility and contributions their ministry is making. The rigs still owned by the DWA usually lie idle because contracts for drilling boreholes are awarded to private firms by the MLGH or NGOs[85].

The lack of fully defined roles also contributes to the internal wrangles. The refocusing allegedly avoids overlap and duplication of work that occurred prior to the formulation of the NWP. The water resource development role is well understood and grasped by the DWA staff. It involves the monitoring of water levels in various surface water bodies and aquifers and water quality monitoring in the surface water bodies, a responsibility of the ECZ. The water management roles are however not well understood and not well articulated by the DWA staff[86]. The staff in the MLGH and the MEWD are also responsible for the internalisation of international drives relating to water. Current drives affecting the water sector include the MDGs and the IWRM. Their success and impact hinges on the methods used to internalise them and the financial and technical support offered through them[87].

2.4.2 IWRM and other international drives

IWRM does not seem to have been fully adopted in the Zambian water sector but insiders say an international drive must have clear aims and be followed by financial resources for it to be adopted[88]. The financial resources are expected from donors or the international organisations creating and promoting the drives. This no doubt

[84] The Public Health Act was first enacted in 1930 but has been amended at least 25 times. The latest amendment occurred in 1995.
[85] Personal communication with Mongu District Water Engineer, 18th July 2004
[86] Discussions with the DWA staff in various provinces showed that the water resource management role was seen as unnecessary since it was only required in the southern province where water shortages occur or in the flood plains where excess water exists.
[87] Internalisation here refers to the repackaging of an international drive to fit in with the local situation in the water sector particularly in the long term strategies for water supply and sanitation.
[88] Discussion with the DWA staff.

increases the dependency of Zambia on international aid and intervention and calls for effective ways of internalising international drives.

Drives like the MDGs are allegedly easier to take up because of the milestone and clearly defined targets that can be used to obtain funding from the donor agencies. Water projects and related activities are allocated money within the Zambian budget. However, in the Poverty Reduction Strategy Paper (PRSP) most of the discourse on water issues appears to be just rhetoric. The water issues are not a priority for the state funds. Evidently the state and donors are willing to support water related projects and activities in the larger towns as these have a better chance of cost returns. According to a report by Water Aid that looked at the bureaucracy involved in releasing money for water projects, the MFNP released only about 13% of the funds allocated to water projects in 2003[89]. Reasons for this low figure were linked to single direction flows of information and bottlenecks in the national budget allocation systems.

The decisions on how the MDGs will be met in the country are made centrally by the affected ministries: Health, Education, Energy and Water Development. Accordingly, the ministries obtain information from the regional and district level on what is needed where. The needs are articulated by the grass root staff working in communities through reports that are submitted to the central state administration. Ultimately the decision of resource allocation, in the water sector, especially for donor funds is made by the MLGH and the MEWD. The key events in the post independence years and their effects are summarised as follows:

[89] Water Aid. 2004. Getting to the true nature of the Problem: The case of financing rural water supply and sanitation in Zambia's poverty reduction strategy.

Table 2.4 Key events in the post Independence Years

Year	Event	Determinants	Responsible Body	Effects
1968	Nationalisation of Zambian large scale commercial enterprises	Expropriation of profits by foreign investors and limited investment locally. Citizenship choice for investors and business owners	The Government	Parastatals created in most urban centres with the aim of supporting rural entrepreneurs but benefits mainly accrued to urban residents
1972	Formation of the one party State	Focus on nation building and remove opposition and implied debate in policy formulation	UNIP	The party and the government became one group. Political activity determined all aspects of life. Concentrated power in political offices
1989	First Water Utility Created in Lusaka	Poor standard of service from Local Authorities, inability to extend services to newly developed residential and industrial areas. Consultants submitted report of options for service improvement	Ministry of Decentralisation	Commercialisation was planned for other urban water suppliers. Based on a private sector organisation format with public sector remit with the hope of synergising efficiency, effectiveness and investment with controlled service costs and extended coverage.
1991	Return to Multi party politics	Internal pressure from Trade Unions and Church organisations. External pressure from neo liberal international agenda linking democracy with development	Trade unions, Churches, International supporters	Economy liberalised soon after the return to multi-party politics. Power of political office diluted but more focus is placed on the economic value of water and other resources.
1994	National Water Policy Drafted	Water sector external funding tied to existence of NWP. Water sector reform required a base document	MEWD and other strategic partners e.g. donor agencies and commercial users	Strategy set out for urban and rural water supply. Water recognised as a scarce and economic good using basis of Dublin principles
2000	Privatisation of the Mining Companies and other Parastatals	Rolling out of economic liberalisation compounded by efforts to improve the efficiency of the commercial enterprises	Zambia Privatisation Agency	Water supply in mining townships was returned to Local Authority departments. The departments were converted into commercial utilities.
2001	WRAP programme	Dublin principles and international discourse emphasising the economic value of water	The State and strategic partners e.g. Donor agencies and the World Bank	Proposed amendments for water Act to include water rights for ground water. Reorganisation of the institutions in the Zambian water sector

2.5 Judicial System

The regulation and management of shared resources such as water sometimes requires the use of legal instruments unless open access is exercised. These instruments can be used in settling disputes and incorporating actors that may otherwise be disadvantaged by land boundaries and investment policies. However, they are likely to favour some actors accustomed to formal systems and those with private ownership who often make use of them to protect their investment. Both customary law and common law that are applied in the current judicial system in Zambia influence the management of water resources. Customary law preceded colonisation while Common law was

introduced by the British during it. However, apart from the indigenous customs and laws, some of what is known as customary law was introduced during the colonial period as an instrument of control (Mamdani 1996, 51). The introduction favoured both the colonial rulers and some traditional authorities that they appointed including those they recognised in the indirect rule. During this period, two separate systems of judicial administration developed. The official courts administered English law and were found in the places where Europeans lived. The application of common law in the urban centres dominated by the settlers influenced the classification of ground water as private water and the free hold lease on land. Customary law was administered in tribal courts and in the rural areas. The customary law continued to influence traditional water management for communal benefit or the open access to water bodies. Incidentally in most urban areas the conflicts and contrast between the two judicial systems remained at a minimum as long as the African litigants were willing to accept the decisions of tribal courts (Ndulo 1984; Epstein 1958).

The judicial administration that was introduced by the British in the then Northern Rhodesia differentiated between Europeans and the native African population. This distinction was made clear by the colonial documentation, some of which states (Ndulo 1984, 47):

> "In the administration of justice to the said peoples or inhabitants, careful regard shall always be had to the customs and laws of the class or tribe or nation to which the parties respectively belong, especially with regard to holding, possession, transfer and disposition of land and goods, testate or interstate succession thereto and marriages, divorces, legitimacy and other rights of property and personal rights. But subject to any British laws which may be in force in any of the territories aforesaid and applicable to the peoples or inhabitants."

Mamdani (1996) refers to the system of duality as a Bifurcated State. Here, two forms of power exist within a single hegemonic authority. In his analysis, urban power spoke the language of civil society and civil rights while rural power spoke of community and culture. Civil power claimed to protect rights, customary power pledged to enforce tradition. The urban power was organised on the principle of differentiation to check the concentration of power while the rural power was organised around the principle of fusion to ensure a unitary authority. He concludes that civil society was racialised while native society was tribalised (Mamdani 1996, 22). In his analysis, the portion of urban population that was composed of natives, mainly middle working class persons, ended up exempt from customary law but not from the racially discriminating civil legislation. This resulted in some calls to try and unify the judicial system especially as both common law and customary law seem to be based on past judgements which in turn are based on principles of earlier generations.

2.5.1 Customary Law

The Zambian customary law is unwritten and administered by the local courts. It is assumed to be in the breasts of the local court justices. Section 12(1) of the local courts act provides that "African customary law shall apply to any matter before the local courts, in so far as such law is not repugnant to natural justice or morality or incompatible with provisions of any written law" (Ndulo 1984, 143). Its application

and dependency on local court justices implies its potential to continue traditional systems of ruling in relation to use and regulation of water resources. Customary law is not uniform as each tribe in Zambia has its own values and beliefs (Mamdani 1996, 49). Many of the laws exhibit forms of similarity in their principles and concepts. The potential variability in customary law weakened its application in the towns created around the mines. The migrant workers came from various parts of Zambia and thus a dispute between members of individual tribes was difficult to settle. As a result common law was applied in the towns.

Chanock (1985, 4) describes customary law as the part of the law applied by the courts in colonial and post-Colonial Africa yet not embodied in local statutes or a part of the English law. He also views it as "the principles which guided the process of reconciliation and thus the immanent egalitarianism of pre-colonial societies". He puts across the argument that it developed from the interaction between the colonialists and the native groups. Gould argues that the use of customary law in the rural areas was a way of maintaining indirect rule by the colonial government. "The chiefs and traditional elders had an important judicial and reconciliatory function. They adjudicated between conflicting parties, admonished the quarrelsome and the anti-social and took whatever action was necessary to strengthen the fabric of whatever social life. The indirect rule enabled the colonial rulers to maintain control over rural areas without having to set up systems there, or giving the chiefs a central role" (Gould in Marcussen (ed) 1996).

Epstein (1958, 199) points out the important role played by urban courts established in the Copperbelt Province in 1938, in the urban administrative system. These courts dealt with most of the disputes among Africans that required legal statements. The cases between Europeans and Africans were dealt with in the court of the Resident Magistrate. The law administered in the urban courts was mainly unwritten. "Any claims brought before the courts were argued according to the customary law of the tribe. The main concerns in the urban courts were moral and legal norms". He further adds that "the procedure employed in the urban courts was not just about legal rights and duties but extended to a process in which judges and litigants worked towards the reaffirmation of norms and values commonly recognised throughout the community. The court was thus a repository of the moral values of a community. Litigants in the urban courts rarely spoke about the law but addressed themselves to the 'facts' leaving it to the court to decide whether the facts disclosed a cause of action and what the appropriate remedy should be. Even though tribal customs varied, the norms of behaviour which underlay a given social relationship followed a general consensus" (Epstein 1958, 211-215).

The application of customary law leads to a conclusion that each tribal authority managed the natural resources within their territories according to their beliefs and customs. In the rural areas that were mainly distanced from the central colonial control each chief presumably decided how water would be managed. In the urban centres the management and supply of water was not influenced by customary law but the rights based common law. After independence, it was inevitable that the use of past precedent from outside the country would be strained; a move towards the practical needs of society as perceived by the law makers (Ndulo 1984).

2.5.2 Common Law

The common law system was introduced by the colonial government and is based on English law. It was originally developed under the auspices of an adversarial system in historical England from judicial decisions that were based in tradition, custom and precedent. The form of reasoning used in common law is known as case-based reasoning (Law Encyclopaedia). During the colonial era common law was mainly applied in cases involving settlers. The mixture of tribes on the Copperbelt caused mainly by the wage economy meant it became applicable in cases involving native populations. In the urban centres and in the legal system of Zambia common law is dominant as it is written and overcomes the need to harmonise various customary laws in cases or disputes involving native populations from various tribes.

Training offered in Zambian law school follows the common law system which advocates for formalisation of property rights. In the higher courts of law such as the high court and the supreme courts, common law is applied while customary law is applied in traditional courts held by chiefs and their council. The latter is also applied in the lower courts of the nation, the local courts. “Common law is typified by its reference to the collective judicial wisdom of the past as a primary source of rules applicable to the present. The critical process in the use of precedence is establishing exactly what makes one case analogous to another and the degree of factual similarity required before one case can be considered influential in the resolution of the other. Precedence is only considered pervasive and not actually binding” (Ndulo 1984, 2).

The focus on rights is articulated in various ways in natural resource management in the urban areas. The Water Act provides for the separation of uses of water based on productivity and basic requirements. Domestic water and access to it is considered a primary use of water while industrial uses are secondary. Land owners have private water within their boundaries or beneath them. However, the land ownership and the linked water rights raise conflicts in some areas where traditional leaders perceive their control over land allocation. The allocation of land is simultaneously the responsibility of the land commissioner who acts on behalf of the President in whom all land is vested. Some practitioners call for either writing customary law or harmonising the common law and the customary law systems. This is a challenging process to undertake even though it has the benefit of retaining the basics of customary law and resolving disputes between the two systems of law. The courts are used to settle disputes or contest decisions made by some actors.

2.6 Conclusion

This chapter provided a historical examination of the Zambian water sector. The migration of the local tribes dominated the settlement patterns prior to the arrival of the BSAC. Most tribes settled close to perennial surface water bodies. The mining activity in the late 1930s initiated another migration phase at a reduced scale and the planned development of the towns. The services such as domestic water were supplied by the mines in these areas. The rural areas underwent an autonomous development, with limited planning from the colonial government. The natural resources were managed according to the traditional beliefs and customs. The copper mines were the backbone of the Zambian economy; the commercial farming, transportation and the fishing industry were centred on them. Their employees provided a market for commercial crops from farms located in the Southern, Eastern

and Central Provinces. The location of the farms can be attributed to the colonial policy of land allocation, the development of the mines, the neglect of the rest of the territory where mineral prospects did not exist, the spread of the tsetse fly and the lack of structural and infrastructure development. The commercial farms made use of both surface and groundwater resources. The former they obtained licences to abstract while the latter were considered private water resources.

Regions outside the Copperbelt adhered to subsistence farming compounded by the limited modes of transport during the first and second republic. The management of water resources was more autonomous and centred around perennial water bodies or rain fed farming. The first rail line linked Livingstone to the Copperbelt. Later the Tanzania Zambia Railway line that connects Kapiri Mposhi through to Dar-es-Salaam was built. The loci of industrial activity and commercial farming presented specific constructs of resource management and development, which in this research are identified as the first paradigm in water management. These areas were initially dominated by white settlers. The colonial government legitimised the inequality between the urban centres along the initial line of rail and the rural areas by labelling the latter as economically unproductive and thus deserving no investment. Power relations in the independent government seemingly had little impact on this policy. The strategic control of resources by the colonial government appears effective and seemingly perpetual. Areas contributing to the national economy and creating wealth continue to attract more investment for infrastructure and provision of services.

The ideology adopted during the second republic, Humanism, created a system of dependency in most areas. It incorporated a system of wealth distribution that promoted perceptions of entitlements to subsidised services particularly in areas with built up infrastructure. It forms part of the second paradigm of water management in this research. The mining companies provided water and other services in townships where their employees resided. Subsidisation of water supply was legitimised by companies providing services to their employees or the public funds being used in Local Authorities. The highly subsidised service and lack of investment in the 1970s and 1980s resulted in dilapidated infrastructure and the need for water sector reforms. The reforms started in the early 1990s after the promulgation of the National Water Policy. They brought with them some changes in the constructs of water resource management such as commercialisation, which is in the third paradigm of water management for the purposes of this research. This entails the removal of subsidies that the government justifies by the need to improve service delivery and the privatisation of the mines. It also introduces another form of private sector participation in service provision; instead of each company supplying water to its employees, a commercial entity supplies water to all residents within a town. It concentrates the supply in one firm and thus effectively increases the power and authority of the supplier.

In the rural areas the provision of water is mainly a responsibility of the community and the Rural Water Sector which is part of the MLGH. State dependency and control is maintained in terms of planning and development of water points through community projects. The maintenance and operations of the water points is left to the communities. Participation in community water projects and capacity building are supposedly increasing in the rural and peri-urban areas; though they appear only to be

substantiated by the project implementers. This issue is addressed in the case studies and discussion chapters included in the main technical report.

The water sector reform has incorporated the review of the Water Act (1949), which some practitioners see as outdated and not progressive enough to cover transboundary waters. The revision of the Act has to be passed by parliament after recommendations are made by the WRAP. The reforms have also resulted in a realignment of the two main ministries in the water sector, the MLGH and the MEWD. Ensuring water supply is within one ministry, the MLGH, potentially minimises duplication in the water sector and results in a separation of powers. Water resource management and development is the MEWD's responsibility. The WRAP team has also been looking at the institutional and legal framework in the water sector. They are expected to propose ways of making the institutions like the Water Board more effective. The Water Board operates within a common law system and not necessarily the customary law system that is followed in some parts of Zambia. The criticism of the Water Act and duplication of roles in the water sector provide evidence of some triggers of the reform process. We should however question the underlying triggers of reform and the expected beneficiaries of the process.

The judicial system in Zambia follows both customary and common law. Common law was introduced during the colonial era and bridges the differences and variations which occur in customary law mainly because it was singular. It is based on English law and covers state and property rights including ownership of land and the use of water bodies within the boundaries. It is predominantly used in the urban areas with formal systems and structures usually focused on individuality. Customary law is unwritten and varies according to tribes. As many variations of customary law as the number of tribes in Zambia is possible. It deals more with community values and morals perceived to be based on rural ways of life. Hence the colonialists perceived customary law as more applicable in these areas where local courts had minimal influences from the colonial government. It promotes the traditional management of resources based on communal values and benefits.