

THE CONCEPT OF PROACTIVE LEGISLATION AS EFFECTIVE INGREDIENT OF LOCAL ENVIRONMENTAL POLICY

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ABSTRACT

Political and environmental directives emanating from World Summits are passed down through the political hierarchy until they hit municipal administrations with quantitative requirements of compliance. The present study analyzes directives that relate to fresh water supply and municipal solid waste. The practical results of international agreements depend on the ability of national and local administrations to provide the necessary legal framework for implementation. This is the fundamental argument of the present study. Traditionally, occurring crises or events such as World Summits have produced reactive legal instruments that react to a specific crisis, directive or event with the intention to strictly meet the immediate expectations. Apart from being reactive, those instruments are static in the sense that they are considered valid for long periods of time without adaptations. In order to overcome the static nature of reactive legislation, the present study creates thinking models that face the future at local levels through proactive legislation. Proactive laws go beyond compliance. They are dynamic instruments, which contain provisions for constant updating and take into account changing social and environmental situations such as population growth and resource limitations. Whereas reactive laws target the courts, proactive laws target local administrations where they induce the concept of dynamic and transparent administration. Principles of proactive legal texts are lined out and explained that contain the potential to satisfy World Summit directives at the local level in a sustainable manner without necessarily resorting to demand-and-control methods of reactive legal procedures.

Key Words: drinking water supply, environmental legislation, local environmental policy, municipal administration, municipal solid waste, proactive legislation.

INTRODUCTION

Traditionally the law is the expression of social order. It regulates and punishes. Its reactive nature generally excludes the educational component that would induce desirable behavior prior to the necessity of punishment. Environmental legislation specifically has been largely inspired by existing and anticipated crises. It was conceived as a selection of principles, norms and rules meant to protect the environment, the ecological equilibrium and the cultural assets of communities (Carvalho 2001). Among the specific legal instruments - the laws - of the environmental legislation discipline it is possible to detect an impressive quantity that merely prohibit and sanction, without expanding an effort to consciously prevent future environmentally aggressive activities. In this line of reasoning, existing environmental legislation remains passive when it comes to stimulating and building a sustainable society. This very concept of sustainability as an advocate of limits to growth has evolved continuously during the second half of the twentieth century, from the early documents of the Club of Rome to the Earth Summit of Rio de Janeiro and all the way to the World Summit of Johannesburg. Even though the successive World Summits have sound the alarm on the future of our Planet and resorted to demanding spontaneous collective and individual initiatives with respect to protecting the environment, legislation has remained reactive. It has not been able to inspire those very initiatives. If environmental legislation were to contribute actively to attaining a sustainable society, it would have to produce a proactive and dynamic legal structure able to create and perpetuate social behavior adamant to a healthy environment.

The present study is concerned specifically with municipal solid waste (MSW) and drinking water supply (DWS). It pursues the objective to introduce the concept of proactive legislation into local environmental policy. Typical environmental requirements for sustainable waste management are the geologically correct location of landfills (Machado 2002) and limitations to their extension (Fehr and Domingues 2005). Typical present and future requirements for sustained drinking water supply refer to admitting the physical restrictions on sources of water and the consequent necessity of new consumption patterns in view of a constantly growing population. This type of consideration requires the collaboration of the law in order to set compulsory targets and to stimulate spontaneous preventive actions meant to attain those targets. The idea of vitalizing environmental management through public involvement has recently been treated by Garande and Dagg (2005) who put forth examples of public participation in water

governance, and by Charnley and Engelbert (2005) who show the repercussion of public participation in environmental decision-making.

The present study, through the analysis of national and municipal legislation on MSW and water resources, and considering the examples of public participation mentioned in the literature, develops and proposes for public scrutiny proactive legal principles meant to effectively support waste management and water governance in the municipal context with a vision of the future. The distinguishing features of these principles are explained and discussed, and the desired effect on the municipal situation is set out in terms of new concepts about waste and water consumption and a new sense of social responsibility.

THE SPECIFIC CASES OF SOLID WASTE AND DRINKING WATER

The public perception of solid waste as a mere nuisance has hitherto resulted in the absence of corresponding legislation in Brazil. The attention to solid waste originated from considerations of public health. Various legal instruments appeared as early as 1954 with the objective of protecting the public from sanitary inconveniences related to collection, transport and destination of MSW (Bock et al 2001). Those instruments were part of the national health policy. The environmental aspect of solid waste only penetrated the legislation during the last decade of the past century. Solid waste was defined as waste in the solid or semi-solid state originating from industrial, domestic, clinical, commercial and agricultural activities. The legislation started to require of the producers management plans for this waste (Carvalho 2001). As a result of the nuisance principle, MSW over the years remained a collection problem. As long as it was removed from the sites of generation, the problem was considered solved and the public was satisfied. This type of perception remains with the general public to this day and is supported by the directives of the Johannesburg Summit (2002), which postulated the reduction by one half of the proportion of people without access to basic sanitation. In the eye of the ordinary citizens, simple collection of garbage and sewage is synonym of providing sanitation services. The destinations were open dumpsites at first, and landfills later on. At the turn of the century surfaced the first indications that landfills were not a perfect solution after all. Legal instruments and environmental policy directives started to require treatment and recycling of specific waste items such as batteries, tires (Conama 257, 2003) and hospital trash (Conama 2830, 2003). Later

on, construction debris was targeted (Conama 307, 2003). This sequence of legal events vividly demonstrates the dispersed and reactive nature of solid waste policy and legislation in the past. Every time a pollution problem was recognized at the end of the pipe, the legislators reacted and emitted the specific resolutions or laws that would reactively eliminate the specific problem encountered. Here lies the cradle of proactive legislation and proactive public policy directives. The public conception of drinking water supply follows very similar lines of reasoning. Access to water is considered a basic human right, and it is expected of local administrations to supply it in adequate quantities. According to Brazilian Law (1997), local administrations are designated administrators of water resources through watershed committees. The *popcorn procedure* of demands and legal provisions becomes evident when, in response to population growth, the non-suspecting citizen simply asks for more water to be found and distributed. The very text of the United Nations Millennium Goals (2000) supports the procedure when it requires the proportion of people without access to drinking water to be halved by 2015. No mention is made of possible additional sources of water.

The advent of World Summits on sustainable development and local general environmental awareness gave rise to proactive thinking that turns perceptions of waste and water upside down. Proactive thinking transforms the end-of-pipe attitude into a start-of-pipe conception. This paradigm shift faces solid waste not as the traditional collection and disposal problem, but rather as a social, raw material and sustainability issue of essentially educational nature. In the case of water, the supply limits are becoming generally recognized and new consumption patterns and transparent management gain status with local administrations. The type of proactive law needed to produce the paradigm shift is the subject of this communication. It is expected to attend to specific Third World situations. Industrialized nations have different idiosyncrasies and social structures and thus attack the waste problem with their own means, which possibly do not require proactive legislation. Proactive thinking feeds on local situations and finds local solutions to local versions of general worldwide problems. In what follows, examples of successful local initiatives are exploited to develop the basic characteristics of proactive legal instruments applicable in a Third World context.

SEARCH FOR A NEW PARADIGM IN MSW AND DWS LEGISLATION

Environmental management in general, as most other managerial disciplines, operates at two distinct levels: conception and execution. The basic tools are the policy, the legal instruments and the involvement of the population. The use of legislation alone invariably leads to reactive measures with limited success because it operates at the execution level only. Proactive instruments can only be generated at the conception or policy level. They require *think tanks*, not *line managers*. To illustrate with the example of a landfill, line managers will reactively operate the existing landfill in the most efficient manner to satisfy the waste disposal needs of the city. *Think tanks* on the other hand formulate desirable policies for the correct insertion of the landfill into a sustainable municipality. At one end they will see to it that the landfill is built at the most appropriate site, and at the other end they will develop policies to keep the landfill at the smallest possible size. The first end is of technical nature, but the second end is of social, educational, economic and administrative nature. Once the strategy is decided on and the principal technical maneuvers are defined, line managers can be called upon to execute the policy.

In the case of MSW many management models are available and have been tested in different locations. They can be used to decide on the locally most promising strategy. Some examples are: bulk collection with bulk tipping, bulk collection with bulk incineration, bulk tipping with or without methane capture, bulk collection with mechanical-biological treatment followed by tipping, divided processing with recycle of both biodegradable and inert material, selective collection with recycle of inert material, execution of collection and tipping by city crews or by third parties, centralized or decentralized divided collection and recycle, formation of cooperatives, stimulation of citizens initiatives. As can be appreciated, the chosen solution in any specific city is far from obvious at the outset and thus must not be delegated to line managers who lack the horizon to analyze all possible implications. MSW is a very heterogeneous commodity. It comprises material derived from residences, commercial establishments, health institutions, street cleaning and construction and demolition. In order to reduce the scope and raise the chances of success, the present study concentrated on domestic waste.

The administrative experience with MSW of the City of Araguari (Central Brazil) was studied and taken as base case for the development of proactive legislation. The strategy used by the administration of this city of 105000 inhabitants includes various stakeholders, namely the city executive, waste pickers and citizens groups. The innovative policy formulation was

accompanied, not preceded or followed, by pertinent municipal legislation, which served the purpose of legally confirming the established good practices. Initially, a diagnosis was carried out to identify the types of waste and their respective quantities. The strategy then followed federal directives for all waste originating from businesses that were made responsible for the collection and destination of their waste. For purposes of managing domestic waste, a cooperative of waste pickers was formed with the intention of transforming the individual daily fight for life into a professional activity run with business criteria. The members of the cooperative themselves, with assistance from the Municipal Department of Sanitation, organized the door-to-door collection of recyclable items that were taken to the separation facility and prepared for sale. The Department of Sanitation also organized voluntary hand-over of inert recyclable material in schools and public spaces that is put at the disposal of the cooperative. As soon as the experience produced visible results in terms of landfill diversion of inert material, it was translated into a municipal law in order to gain permanent status. The law holds the Department of Sanitation responsible for the implementation and continuous operation of divided collection of household waste. It states as destination of all inert recyclable material the cooperative of waste pickers who are now called waste retailers, and demands of the Department of Sanitation necessary steps to transform into compost the biodegradable portion of household waste. Material not separated at the source needs to be collected and tipped. For this reason, the law also demands that the Department take the lead in inducing residents to participate in the source separation system. At the same time, penalties are stipulated for people who discard their waste in places of their own choosing in order to escape the separation routine.

The case of this municipality is inspiring and leads the way to proactive management and legal instruments for various reasons. Firstly, the development of practical management procedures for domestic waste and the corresponding legal scriptures occurred simultaneously. The law was part of the experiment. Secondly, the source separation as essential parameter of the experiment was included in the law, although at that point in time it was not practicable to force the adoption of source separation on all households. This will occur with time as the experience progresses. Thirdly, the waste retail cooperative was explicitly named in the law as official receiver of all source separated material. This provided residents with information on the target of their separation effort. Fourthly, all source-separated material was recycled and thus implied a

continuous reduction of landfill size. The law made the waste management process transparent to the population.

In the case of drinking water, the basic flaw identified in present usage patterns was ignorance for lack of information on the part of the citizens. The same river that furnishes the water upstream of the city receives the sewage downstream. The supply limits, both present and future, are not made public. Riparian conservation is non-existent. As the water problem is much less visible than the garbage problem, the initiative of providing proactive legal instruments will depend on the local legislature.

BASIC PREMISE OF PROACTIVE LEGISLATION

Household waste

All stakeholders are actively involved in the experience that culminates in the proactive law. The aspects of sustainable practices are clearly expressed in the law. The law has its roots in social facts and situations. There is to be one only law on MSW management in the city, instead of a proliferation of decrees and resolutions on disconnected subjects. The basic target of the law is to create and perpetuate sustainable waste management. Normally, the law demands a change of established habits and thinking models. The law assigns definite responsibilities to all stakeholders. The proactive law reduces the distance between the ideal and the real situations. It forces the diffusion of knowledge on its subject matter, such that the motives for commands and sanctions can be clearly understood by stakeholders.

The proactive law anticipates undesirable situations that otherwise would lead to reactive legal measures. It stimulates creative practices with respect to its subject matter that can lead to or maintain the sustainable aspects of that very subject matter. Specifically, the proactive law on domestic waste puts the responsibility for this waste on the citizen who produces it. To achieve it, the law does not regard the citizen as waste generator, but rather as waste producer who is held responsible for the destination of his or her *product*. As the product *waste* can only have a noble destination if separated at the source, this separation is specified as an unavoidable responsibility of the citizen. As far as the municipal administration is concerned, its obvious responsibility put forth by proactive legislation is to reduce the volume of the landfill through implementation of successful recycling practices. The law indirectly transmits the message that a city with growing landfill volume is unsustainable.

In a dynamic interaction between the legislators, the administrators and citizen groups, the legal instruments are continuously improved in order to remain modern and to keep reflecting the changing real situation. There is a perpetual negotiation in progress, and the law itself dictates provisions for its regular revision. The danger of an obsolete law preventing social progress is thus eliminated. Through the constant revision and improvement the law transmits new ideas and targets to the population in order to shape the behavior and adapt it to the most recent knowledge and experimental results.

The law formalizes the profession of waste retailer and wholesaler, two fundamental instances of reverse logistics for MSW. The individual citizen or resident as waste producer is incorporated into waste logistics where he or she has to cooperate with the retailers. This way the resident is induced to change his or her attitudes towards an official economic activity that formerly was defined as the nuisance of garbage picking. Of the municipal administration the proactive law asks the organization of the whole reverse logistics chain for MSW from the producer all the way to the final re-user. Parts of this chain are retail cooperatives like that described in the context of the City of Araguari. The law stimulates their existence and operation to make them vigorous components of the overall effort. Last not least, in the particular case made here, the law clearly stipulates the waste management philosophy: divided waste processing. This means separation of biodegradable and inert material at the source with separate collection and recycling of both fractions in order to achieve high landfill diversion rates.

The proactive law introduces a new vocabulary meant to help change outdated thinking models. The words *waste* and *garbage* are substituted by proactive expressions such as *wet and dry transit material*.

Drinking water

The intention of proactive legislation is to achieve desired patterns of behavior through the compulsory provision of pertinent information. If the municipal administration succeeds in explaining the importance of preserving riparian spaces, e.g., citizens will be stimulated to consciously adopt their behavior not only to restrain from devastating them but also to be vigilant about aggressions by others. The law will promote the best ways to preserve the available water sources and to inspire consumption patterns supportive of guaranteed water supply to the ever-increasing population. The first of these concepts will be addressed by demanding riparian

preservation initiatives, provision of infiltration spaces for rain water, treatment of sewage, separate storm water collection, maintenance of data banks on the water resource situation and formation of a municipal guard. The second concept requires educational measures, the continuous publication of supply limits and of necessary restraints in consumption with compulsory annual revisions.

DISCUSSION AND PROSPECT

For the sake of argument and due to space limitations, it is not deemed necessary to copy the complete text of the law here. It suffices to discuss the original proactive items not usually found in reactive legislation.

The municipal context was chosen for this study on proactive legislation because at this level occurs the direct interaction between the citizens and the administration, and because it is at this level that the citizens claim their rights and perform their duties. The citizen who resides and works in the municipality identifies himself or herself directly with living standards, environmental conditions, health and educational services, solid waste situation and fresh water availability prevailing in the municipality. Consequently, he or she is affected directly by municipal legislation in his or her daily activities. The proactive law is designed to directly address every citizen and make him or her aware of the results of his or her attitudes and collaboration.

Proactive law is created contemporarily to managerial experiments and their positive results. Proactive law instills attitudes and behavior patterns that prevent the occurrence of situations reactive law would have to mitigate *a posteriori*. Proactive law exerts a convenient tolerance dictated by practical experience. It admits, e.g., the present impossibility of diverting all waste from the landfill. Accordingly, the new denomination *transit material* is used with discretion pending future amendments and stricter directives. The law also transmits to the citizens the idea of a sustainable city as one that is able to control and reduce its landfills. The law has absorbed and formalized the idea of progressive landfill diversion as one of the principles that guarantee the city's sustainability. No reactive instrument has so far been able to achieve this.

Upon requiring of the administration to continuously supply pertinent information on the available fresh water quantity and quality, the law transmits to the citizens an idea of responsible

consumption. Even a poorly instructed person can perceive that the river does not grow simply because his or her family grows, so that any additional person in the community can only enjoy the water spared for him or her by the others.

By determining the inclusion of all existing private initiative into the management model, the law spreads its impact to aspects of city budget and employment. In Brazil, and presumably in other Third World countries, garbage picking has become a widespread and lucrative activity. Upon formally transforming this large work force into an official component of the logistics and granting it status of transit material retailer, the municipal administration can reduce its physical and financial intervention in the landfill diversion program and at the same time provide means of subsistence to a large portion of the community. Finally, proactive law never becomes obsolete or stagnant because it forces its own periodic revision and adaptation to new contexts, both social and technological. This law will be forever modern.

CONCLUSION

A proactive legal concept has been developed and described that is expected to involve all stakeholders in the quest for continuously improving municipal transit material management and for securing drinking water supply to the population for the foreseeable future.

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