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Participation and awareness of citizens in drought plans

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SUMMARY – The drought plans are essential tools in water planning. However, in a large part of them, citizen participation is reflected in a theoretical way and with little ability to actual involvement. These plans are reactive to crises in the water deficit and not envisage a scenario in which the drought is presented as a fact of life but erratic. Moreover, the involvement of the media in raising public awareness about the value of water is essential at the present time and is not sufficiently covered in such plans.

Key words: Water scarcity plans, public review, dissemination of information.

RESUME – *"Participation et sensibilization des citoyens dans la planification relative à la sécheresse". Les plans de sécheresse sont des outils essentiels dans la planification de l'eau. Cependant, dans une grande partie d'entre eux, la participation des citoyens est reflétée d'une façon théorique et avec peu de possibilité de participation réelle. Ces plans sont des réaction aux crises de déficit en eau et non pas pour envisager un scénario dans lequel la sécheresse soit présentée comme une réalité de la vie quoique erratique. En outre, la participation des médias dans la sensibilisation du public quant à la valeur de l'eau est indispensable à l'heure actuelle, mais elle n'est pas suffisamment traitée dans ces plans.*

Mots-clés : *Plans concernant la sécheresse, examen public, diffusion de l'information.*

Introduction

Drought has been a common phenomenon but episodic and well known since ancient times in the Mediterranean climates. Traditional systems of water supply covered and accepted it, in the same way that today we look at the course of seasons. The modern technology has made us, for a time, to forget irregular rainfall and people dazzled by the false security of a steady supply got startled every time renewable water resources are not sufficient to meet our growing demands.

Thus, droughts represent an encounter with reality, an affirmation of our fragility and of the limitation of our water resources and a conflict that always comes with opportunities. Plans are designed to cope with droughts which, in many cases, attempt simply to overcome them and return to a situation which is considered normal. In other cases, the drought plans are designed with the notion that this is an episodic phenomenon. Therefore, it should have to be assumed as repetitive phenomena and planners should attempt to design a supply system that is flexible enough to overcome it, without oversize supply infrastructure.

In all cases, the drought plans look for a solution to the conflict between supply and demand by adjusting one or both ends of the problem. However, the measures always affect collective interests and groups, sometimes powerful and numerous others. Therefore, they always involve a certain degree of conflict that must be resolved in a most satisfactory manner. To this end there are different alternatives (Fig. 1) that in turn produce different degrees of satisfaction in its resolution. The aim of this article is to analyze critically the role of participation and civic awareness in the drought plans.

The drought plans are an essential tool for water management. Citizen participation is essential to ensure its success. This is because its application is produced under conditions of water stress and this is generally accompanied by social tension. Equally critical is the social awareness, in the sense that there can not be real changes in the consumption of water during periods of drought if there is no awareness of the drought situation and about the need to reduce water consumption.

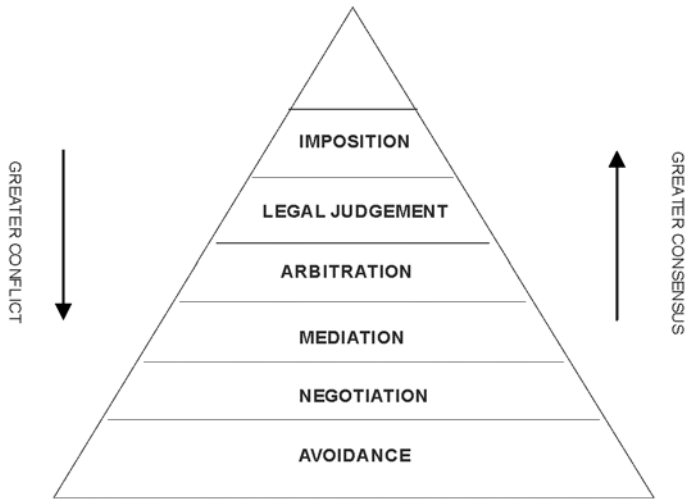

Fig. 1. Water conflict pyramid after Viñuales *et al.* (2007).

Definitively, it could be argued that only citizenship participation and the awareness of the need to organise solutions guarantee the success of the drought plans. Nonetheless, the tasks of getting a right representation and participation of all social actors involved and the achievement of a proper social awareness, are not trivial. It requires the proper balance between all the interests at stake, including environmental, and raise awareness among educators and the media about the necessity and appropriateness of the measures that the drought plan requires.

Water scarcity plans

The need for drought plans results from the scarcity or erratic supply of water. In fact, water crisis only happens when at some point and during a given time people do not have the necessary water resources. However, it should be noted that the concept of necessary resources is relative and it is probably depends on the perceptions of different agents. For instance, a person living in a flat has an idea of what is the amount of water needed for a standard day, and another living in a big house with garden and swimming-pool has another idea of the necessary water resource.

The first problem to be coped comes with the ambiguity of the conceptualization of necessary resources and it should be addressed with social participation. Drought Plans define various stages or levels of drought according to the different deficits of available resources. Since them, measures are planned responding to different scenarios. The consensus about a defined water deficit for different scenarios should be achieved in advance of the designed measures. Besides, different interests and stakeholders should be balanced both in the definition of water deficits and in the measures design.

Thus, from the beginning, citizenship participation is critical in defining the deficits and the measure steps to take at each stage. It can not be accepted that purely "technical" or "scientific" undisputed solutions exist outside of the economic, social or environmental debate. We all know that any single scientific or technical solution from watchtowers has not achieved its completion due to its economic, environmental and/or social inconsistency. In fact, this is a positive thing and this could be considered as self-defence mechanism like other species that, despite our mistakes, have enabled us to achieve a global outreach.

What is the purpose of the drought plans? The answer is simple and complicated at the same time, but depending on the way we respond to this question we should enquire about citizenship participation within its drafting and implementation. Plans for drought might simply list the actions to adopt in a given drought scenario and in this case, difficulties occur when trying to define which user has to bear restrictions on their consumption and until what level. This is the case of *reactive* plans that are limited to respond and to react to a given situation of resource gap. Alternatively, the drought plans can have a *proactive* nature which attempt to take preventive decisions in the medium and long term in order to minimize damages/costs and to plan actions during drought.

Indeed, according to the MEDROPLAN project resulting guide to tackle drought in Mediterranean climate areas (Mediterranean Drought Preparedness and Mitigation Planning), drought management reactive approaches are based on the implementation of actions after a drought event has occurred and is perceived. Those actions are taken in emergency situations but not based on a contingent plan. Frequently, actions are taken with little time for evaluating optimal actions and they present also technical and economical weaknesses. Limited stakeholder participation is present in those plans. Moreover, highly costs are estimated for reactive solutions to water scarcity crisis.

Proactive or preventive approaches to drought management have actions designed in advance, with appropriate planning tools. These actions include stakeholder participation and provide both short and long term measures and include early warning systems. They also include a contingency plan for emergency situations. Lower costs have been claimed for solutions planned well in advanced to the drought episodes. Nonetheless, it should be noted that the difficulties in the coordination and cooperation between institutions – i.e. municipal government, regional government, national government, ministry of environment, ministry of agriculture, etc. – and the lack of policies to support and revise the proactive approach may lead to an inadequate planning. The ineffective coordination and cooperation between institutions and the lack of policy to support and revise the proactive plan may lead to an inadequate planning.

In these definitions can be clearly seen that in the case of reactive plans participation is very limited and only the urgency of the measures silence the economic, social or environmental reactions. In fact, those reactive instruments are just delaying the problem which possibly will be re-fired before or during the next episode of drought. Instead, the success of the proactive plans lay in the correct representation of the multiple stakeholders involved and in the adopted measures.

The citizen participation

Citizen participation is completely different for each type of the plans outlined above. Reactive plans do not provide genuine participation. They only provide channels of understanding between actors involved in implementing measures of greater or lesser emergency, and representatives of the public who receive such measures. Water crisis is already here and actions, planned or improvised, can not be delayed till participatory discussion is concluded. In fact, the acting administration only requires or permits citizenship participation in order to mitigate possible reactions to the proceedings to be adopted. There is no chance of consensus in goals neither in methods due to the urgency of the drought which prevents even the consideration of various technical alternatives.

An example of how participation is regulated is the *Plan Especial de Alerta y Eventual Sequía en la Confederación Hidrológica del Júcar* (CHJ, 2007) (Special Plan for Possible Drought Alert) developed by the Jucar River Water-Basin Authority where the creation of a Standing Committee on Drought by Decree from exceptional situations is only proposed. This means that it opts for a typically reactive plan.

By contrast, the *Plan Especial de Alerta y Eventual Sequía en la Confederación Hidrológica del Segura* (CHS, 2007) (Special Plan for Possible Drought Alert), elaborated by the Segura River Water-Basin Authority, has a chapter dedicated to citizen and institutional participation (Ch. 7.2), within the frame of the Aarhus Convention (1998) and the Water Framework Directive (WFD, 2000). It collected, by way of inventory, a list of agencies and institutions involved: 8 groups correspond to different levels of government, 3 for educational or research institutions, 15 for economic groups, 4 for professional groups and 7 to environmental organizations. However, their role is purely advisory and in the Standing Committee to form during episodes of more severe drought, only one from 19 of its members will be an individual representing non-public nor professional or economic interests. It is also a typically reactive process.

Moreover, the draft of the *Guía para la elaboración de Planes de Emergencia por sequía en sistemas de abastecimiento urbano* (Guidelines for the Elaboration of Emergency Plans by Drought in Urban Supply Systems) developed for the Spanish Association of Water Supply and Sanitation (AEAS) and the Ministry of Environment by Cubillo and de Castro (2007), citizen participation is just mentioned as user involvement in the planning and as one of the 51 measures of a general character.

Focusing on the proactive plans, in which public participation is required, the problem is defined around the representativeness of the stakeholders and their balance of interests. Normally users might be grouped into three categories: economic users, government and non-governmental agencies. In general, economic stakeholders tend to be overrepresented, while the non-governmental non-economics tend to be underrepresented. The guide developed by the MEDROPLAN project proposes a list of users where firstly, groups with economic interests can be grouped into seven types:

(i) Rain fed farmers.

(ii)Irrigated area farmers.

(iii) Urban water consumers and water utilities.

(iv) Tourism companies.

(v) Industrial companies.

(vi) Agricultural insurance companies.

(vii) Rural lending institutions or banks.

Secondly, the administration would be represented by four groups:

(i) Water Basin Authorities.

(ii) Local Water Authorities and Water Suppliers.

(iii) Meteorological and Hydrographical Institutions.

(iv) Ministries of Agriculture, Environment, Water, Tourism, Industry.

Ultimately, the three remaining groups correspond to organizations without administrative responsibilities or economic interests:

(i) Research and education institutions.

(ii) International Cooperation Organizations.

(iii) Non-governmental Organizations.

The mere relation of user groups defined by MEDROPLAN is already sufficiently illustrative. Out of a total of fourteen groups, there are only three independent organizations which are not part of the administration and without economic interests in water use. In other terms: from all the fourteen groups, half of them are groups with economic interests. In a natural way, this distribution diverts the proposals and solutions to protecting the economic interests and often it represents a burden on water resources in the future.

This situation is even worse in the *Real Decreto 1265/2005, de 21 de Octubre,* (Royal Decree 1265/2005 of 21 October), which adopts exceptional administrative measures for the management of water resources and to mend the effects of drought in the watersheds of the rivers Júcar, Segura and Tagus, where the Standing Committee on Drought is comprised of thirteen people with the right to vote (ten of them representatives from the government and the three remaining from economic groups) and three more which only have the right to speak, one of which represents environmental groups.

Beyond achieving an equitative balance between the various groups involved in drafting a drought plan, it is important to discuss the mechanisms that ensure a genuine and legitimate participation. Many times, from the most sincere participatory will, forums are led by technicians. It happens in a natural way, since their knowledge of existing problems and possible solutions are much higher than those of other participants. Therefore, it is very important that engineers and hydrogeologists

understand that in almost all cases there are various alternatives technically possible and, in many cases, choosing one depends on economic, social or environmental criteria whose choice should be offered to the extended group of stakeholders. There is no single solution.

The same happens with the implementation of the chosen solutions. Public review must play an important role throughout the plan development process since the social and environmental conditions may change and aspects of risk analysis and management improve and evolve. Once the plan is developed, it may be necessary to revise periodically certain aspects or the totality of it. In the European countries, the information and public participation in the development and the revision of drought management plans should be achieved according to article 14 of the European Water Framework Directive (2000/60).

In all cases public revision is complex, but in most cases two aspects are included: dissemination of the information to be revised and multistakeholder dialogue to revise the information. The feedback from stakeholders may be collected by means of the responses to questionnaires, group interviews, or other methods to obtain information. The interviews may be public in order to enhance the participation and discussions among all stakeholder groups.

A periodic revision of the plan by institutions and stakeholders is strongly advisable, as situations change and plans should be adapted accordingly. Moreover, it is obvious that an in-depth revision of a drought management plan should be made after each drought episode, analysing the response of all the aspects of the plan, from the ability of prediction and warning provided by the methodological component to the effectiveness yielded by the operational component. This analysis would provide elements to adapt and improve the plan, in a continuous feedback process that keeps it updated.

Citizen awareness

The effectiveness of the consented measures in a drought plan depends extraordinarily on the collective awareness of its necessity and of its understanding. In the medium and long term, the increase of people's awareness about our dependence on water resources, its variability and the need to use them in a sustainable manner is a matter of environmental education that will not be addressed in this paper.

Nevertheless, at present this crucial aspect is almost absolutely on the hands of the media. Thus, we should take special care to report regularly and transparently to the media and not just await their response and support when drought is already among us. It is also necessary to know their mechanisms and interests in order to understand how the transmission occurs from the expertise to the general public. It is enough to examine the following example to detect its flaws and opportunities. Between the years 1997 and 2003, rainfall decreased at around 40% at the Balearic Islands. As a result of it, there was a risk of water restrictions in the main urban centres of the islands, among which was its capital, Palma de Mallorca. During 2000, the forecasts of Palma water consumption presented a time sequence like the one shown in Fig. 2. Citizens and media were both highly concerned with water scarcity due to drought. Moreover, the threat of restrictions had a decisive impact on the awareness campaign, achieving to lower the summer consumption peak considerably. The drought situation and sensitization campaigns continued for the following year. However, water curve consumption of the capital submitted its usual and previous profile due to the disappearance of the threat of restrictions and the disinterest or saturation of the media with that issue.

It could be highlighted here, the low cost of water saved thanks to the synergy between saving campaigns and the media. Moreover when it is water that should not be depurate. It might be estimated at around 1 €/m^3 of economic savings only from supply, reaching more than double if it is considered the avoided depuration.

It is worthwhile to point out the fact that water saving campaigns also have effects on consumption patterns in times of drought, but we could affirm that they are not independent from the eco received by the media. Agbar (Catalan water company) estimated the effectiveness of water awareness campaigns in a 10-15% of the water consumption registered. This result was presented at the

Congreso Nacional de Medio Ambiente (Spanish National Meeting on the Environment) (CONAMA, 2006). Obviously, water awareness campaigns developed by both private and public organizations overlap during severe drought periods. These campaigns are also reinforced by the impact of media. To establish the residual effect of such campaigns after the drought is difficult, though it could be said collective consciousness increases slowly but inexorably drought after drought.

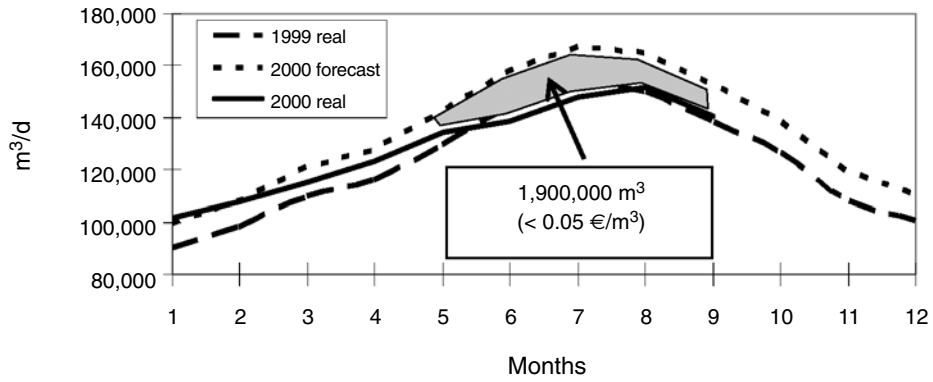

Fig. 2. Consumption of Palma de Mallorca in the years 1999 and 2000. The shaded area corresponds to the decrease in consumption and the unit cost of the awareness campaign in 2000.

At present, we are recovering the value water was given by previous generations. We should also insist on recovering the "Mediterranean" consciousness that is the knowledge that beyond the wet periods, dry episodes are inevitable.

Conclusions

Drought plans are essential tools in planning water. They should be designed in a proactive way to tackle the hiperanual climate variability, especially in the Mediterranean region. Citizen participation is required from its redaction to its implementation during the drought. Only doing that, we can ensure success in their development and in the citizen understanding. This results in a better resolution of crises provoked by any dry event with the obtention of the necessary consensus to overcome it and reducing other solution formulas which posed a greater economic, ecological and social cost. In order to be successful, participation must be effective and participants must perceive that their opinions are listened and taken into account. A transparent approach should not hide the tensions that any technical solution raises. Balanced, economic or political interests of stakeholders must be subordinated to general interest, not only to the current generation but also from future generations.

Much of the drought plans drafted in Spain can not be regarded as proactive due to they are plans that are activated only when there has been some degree of drought. Despite of this, citizen participation without direct professional or economic interests in the exploitation of water resources is purely symbolic, when exists. It just seems that pursues the social understanding of the actions to be adopted or to minimize potential conflicts. The improvement of citizenship participation has to be an objective for the coming years if we want to make progress in the sustainable use of water.

Regarding citizen awareness, drought plans present saving campaigns and environmental education. Although they are effective in the short term, during the episode of severe drought, and also at a medium and long term, as a step towards the understanding of the intrinsic value of water, they forget two key aspects. Drought is presented as an abnormal phenomenon in the availability of water resources, when it constitutes an inevitable event that occurs now and will occur in the future. Finally, the role of the media and its dynamics in the perception of collective phenomena should be regarded as fundamental in drought plans. Only the persistence in the most transparent and objective information might help to make the transfer of management alternatives. These might be debated publicly and thus the more sustainable responses will progress in the management of water resources.

References

Aarhus Convention (1998). *United Nations Economic Commission for Europe Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention):* Bull. 6-1998, point 1.3.149 Adopted on 12 May.

BOE (2005). Boletín Oficial del Estado. *Real Decreto 1265/2005, de 21 de Octubre*, por el que se adoptan medidas administrativas excepcionales para la gestión de los recursos hidráulicos y para corregir los efectos de la sequía en las cuencas hidrográficas de las rios Júcar, Segura y Tajo.

CHJ, Confederación Hidrológica del Jucar (2007) *Plan Especial de Alerta y Eventual Sequía en la Confederación Hidrológica del Júcar*.

CHS, Confederación Hidrológica del Segura (2007) *Plan Especial de Alerta y Eventual Sequía en la Confederación Hidrológica del Segura*.

Cubillo, F. and de Castro, J. (2007). *Guía para la elaboración de Planes de Emergencia por sequías.* AEAS, Asociación Española de Abastecimiento y Saneamiento.

EU Water Framework Directive (2000). Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy.

MEDROPLAN (2007). Drought Management Guidelines and Examples of Application (2 vols in 6 languages), Iglesias, A., Cancelliere, A., Gabiña, D., López-Francos, A., Moneo, A. and Rossi, G. (eds). European Commission, MEDA Water Programme, Zaragoza. Available at: www.iamz.ciheam.org/medroplan.

U.S. Department of Energy (1999). *How to design a public participation program*. Office of Intergovernmental and Public Accountability

Viñuales, V., Rodríguez-Perea, A. and Gelabert, B. (2007). Current and emerging domestic conflicts over water resources in Spain. In: *Water Policy in Spain*, Garrido, A. and Llamas, M.R. (eds), (in press).