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GENDER DIMENSION IN PROTECTING WATER RESOURCES IN MALTA

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THE WATER SITUATION IN MALTA

In Malta, we are confronted with a water problem due to limited resources in relation to demand which forces us to look at the integrated management of all resources including proper groundwater utilisation, desalination and purified sewage. It is our experience that proper water demand management can be achieved only through an integrated approach involving both the use of legislation, economic and technical measures, and also the involvement of the public in activities aimed at the rational use of water resources.

The legal and administrative set - up were enhanced in order to regulate water use, first by the setting up of a Corporation in 1991 to manage all the water resources of the country and secondly, in 2001 by the setting up of the Malta Resources Authority which holds regulatory responsibilities as regards to water management. Since October of last year, the Water Services Corporation has assumed responsibilities for the sewerage network as well.

The Maltese islands are situated about 90km south of Sicily, with a total area of 315 square kilometers and a population of about 1200/ sq km, Malta is one of the most densely populated countries in the world. We must also add a population of around one million tourists per year. Having a typical Mediterranean climate with an annual rainfall of around 520mm concentrated between October and March, Malta is classified as a semi - arid country. Also, topographical features render even more unfavourable the collection and storage of water, so that we suffer from a persistent water scarcity.

The water resources of Malta are mainly groundwater originating from the mean sea level aquifer, which accounts for 50% of all public supply and desalination of seawater. The latter is used to blend the ever - increasing saline groundwater caused by uncontrolled private extraction. The perched aquifers are not utilised for potable purposes because of the high nitrate content. This water is mainly used for agriculture purposes. The total extraction from the two aquifers is about 22 million m^3/year and desalination accounts for a further 17 million m^3/year.

An important source of second class water that somewhat alleviates the demand for potable supply is treated sewage effluent. One such plant has been in operation since 1983 in the SE of the Island. This alone has the capacity to treat about 15% of sewage produced. However since supply relies on agricultural demand, it normally supplies an average of 300000 m^3/month mostly for irrigation of nearby fields. Currently we are in the initial stages of constructing two new treatment plants, one in Gozo financed partly by EU funds, and another in the North of Malta financed by the Italian protocol. The third and major plant, which should treat all remaining sewage should be constructed at the point where there is the major outfall into the sea at Wied Ghammieq.

GENDER ISSUES IN WATER PRODUCTION AND PROTECTION

Malta, like most European countries has more female science graduates than males. However, we also have a process of "side - streaming" of females to certain fields rather than in others. This is clearly shown in table 1 where males dominate in engineering and agriculture, whilst females outnumber males in medical, biological, chemical and social subjects.

The current situation within the Water Services Corporation is shown in Table 2 below. That the " water world " is almost solidly male is also evident in our case. To my knowledge, there has never been a female engineer employed in water management, both for potable and sewage since the day

they were set up as separate departments within Government service, much less at a lower technical level.

However, a closer inspection at this data reveals an interesting factor. The persons responsible for monitoring water quality and ensuring a safe supply at all times, are all three female chemistry graduates, two of whom hold post - graduate degrees. The importance of their role can be summarised as follows:

- It is on their alert that engineers have to act whenever abnormal laboratory results are obtained.
- They are in the front line in developing strategies in improving the quality of our potable supply up to EU standards.

Table 1. Gender Distribution in some Faculties at the University of Malta for Academic Year 2003/04

Faculty	Course	Male	Female
Engineering	B.Sc	259	68
	Post – graduate	30	3
Science**	B.Sc	91	97
	Post – graduate	54	25
Agriculture			
1995 – 2003	Diploma	39	11
	Post – graduate	32	22
2003 – 2004	Diploma	58	28
	Post – graduate	2	2

** Includes the Departments of Biology, Chemistry, Physics, Mathematics, Computing and Statistics.

- They are also currently working to obtain the first ever laboratory accreditation in Malta.
- They have an important role in organising and teaching diploma and degree courses, which the WSC carries out in collaboration with the University of Malta.

Table 2. Gender distribution within the Water Services Corporation

	Water section		Drainage section	
	Male	Female	Male	Female
Administrative	36	23	27	26
Engineers	12	1	17	0
Analytical	0	3	0	1
Technical	33	3	95	0

The estimated total of 90000 m^3/day of sewage produced in Malta has to be treated before disposal. This is an obligation both to the Barcelona convention and to EU legislation. However, as already stated, treated sewage is an important source of second class water that should be reutilized to the fullest before dumping to the sea. The major beneficiary would be the agricultural sector especially in those areas that do not have an alternate supply of water.

To obtain complete treatment, however, we must first protect our sewage quality. Since treatment is normally biological, toxic wastes in sewage have adverse effects on its treatability. In Malta, we have legislation that in effect regulates what goes into the sewage system from industrial establishments. We are also lucky that our industrial sector is not the sort that normally produces adverse effects on the environment.

The one female professional in this section is in charge of this unit, which is also responsible for the actual monitoring of sewage quality and treated effluents. Permits are issued to applicants whose establishments are in accordance with the requirements of the law. Before this happens, it is normal for us to meet the applicants and discuss their situation as regards their legal obligations. Hence, we are finding an increasingly important role as educators. Industrial enterprises in Malta are very often

small, family run concerns employing a limited number of persons. Personal experience has showed that very often the, mainly, male managers are more disposed to listen politely when they are faced with a female official. A male colleague may unconsciously generate friction since his demands are more likely to be taken as an imposition. The same managers also take a more active interest in the explanation of what are their legal obligations and to what extend their activities influence the system as a whole. Very often they admit that they had never considered at all the impact of their activities on recovery of effluents. This is because we still tend to consider that the effects of our discharges on such a vast entity as is the sea are nil.

There is another area where we can act as educators, but which unfortunately we cannot yet tackle, due to shortage of personnel resources: the Maltese housewife. Domestic tasks such as cooking and housework are still mainly the woman's job in a family. Hence, the housewife is the main person that disposes of household wastes down the drain. Also, since very often a basic knowledge of scientific topics may be lacking, especially amongst the older generations, it is probable that a general unawareness exists of the effects that some of our commonly used household chemicals have on the environment at large, let alone on water recovery. In this respect I believe that an educational campaign, similar to the one that is currently encouraging domestic solid waste separation, aimed at this sector of the population should be implemented even before the new treatment plants start operation. Such campaigns can be aimed towards, for example:

- the more sensible use of water for all cleaning purposes,
- the choice of detergents with a low phosphate content, since the levels of phosphates in effluent must be lowered according to EU regulations both for marine disposal and for irrigation purposes,
- the non disposal of toxic chemicals down the drain, such as kerosene and other organic compounds,
- the non disposal of large quantities of used cooking oil in the sewers, since this apart from causing blockages in the system, has the effect of increasing the BOD of the sewage to be treated. Also, catering establishments by law must install grease traps on their outlets before joining the public sewer, but this law does not cover private houses, whose contribution can be appreciable.

Decisions about water policy, allocation, pricing and monitoring are important in the development of sustainable water systems. Women's participation in this management of water resources must be seen as positive action and much more has to be done by local authorities to increase their presence.

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