

2. MACAU SAR

2.1 Water Resources Management Policies and Actions

In Macau, the Report on the State of the Environment of Macau (2005) has, over the past years, been using the “Pressure-State-Response” (PSR) framework to analyse Macau’s environment. This framework would be implemented through an “environmental indicator” system, an important tool for the processing of various environmental data.

The Report states the environmental indicators for water resources which include:

- Quality of drinking water
- Drinking water consumption
- Average pollution index of coastal waters
- Wastewater treatment

In view of the present situation, the impact of salinity on Macau’s drinking water quality in recent years continues to adversely affect human health and the sustainable development of Macau. To solve the problem, a long-term strategy and regional cooperation must be sought. The “save water” concept should be included in the overall strategy of socio-economic development, while re-use of wastewater or irrigation with treated wastewater should also be considered. Save waters education should be widely promoted, and short-term, medium-term and long-term strategies on the protection of fresh water resources and supplies should be explored.

All coastal water sampling points indicated that the coastal water samples are polluted at different levels and continue to become worsen. Continuous investigations and research are therefore important in providing necessary data and information for developing a long-term strategy to improve the quality of coastal waters. In view of the impact of episodic water pollution incidents in the river basins, close regional cooperation and timely information exchange must be maintained.

Macau should also continue to improve the coverage and management of its drainage networks. Monitoring of the water quality of the drainage system should be enhanced to ensure that the quality of coastal waters is not affected by misconnection of drainage pipes or illegal disposal of pollutants.²¹

²¹ Referenced to the Report on the State of the Environment of Macao 2005, <http://www.ambiente.gov.mo/tchinese/05/2005/en/index.htm>

2.2 Environmental Evaluation/SEA in Macau

In Macau, no formal provision has been made for a national system of SEA for policies, plans or programmes. The concept of SEA has not been integrated into decision making on any proposed policy, plan or programme yet.



Seaboard of Macau²²



Wastewater treatment²³

²² Source: <http://www.ambiente.gov.mo/tchinese/05/2005/en/index.htm>

²³ Source: <http://www.ambiente.gov.mo/tchinese/05/2005/en/index.htm>

2.3 Environmental Evaluation/SEA on Water Resources Management in Macau

As mentioned above, there is no formal provision made for a national system of SEA for policies, plans or programmes in Macau. The concept of SEA has not been integrated into decision making on any proposed policy, plan or programme yet, including those for water resources management.

A summary table for the water resources management policies and actions and SEA status in Macau is presented in **Exhibit MA-1**:

Exhibit MA-1 Summary of Water Resources Management (WRM) Policies and Actions and SEA status in Macau	
(a) WRM Policies and Actions	
WRM Policies and Actions	Policies <ul style="list-style-type: none"> In Macau, water resources management policies are built based on the "Pressure-State-Response" framework Actions <ul style="list-style-type: none"> Save Water
Guidance/Legislations in WRM	N/A
(b) Environmental Evaluations / SEA Status in WRM Policies and Actions	
Type of Assessment	N/A (no formal provision made for a national system of SEA for policies, plans or programmes in Macau)
Requirement Mechanisms	
Legislation for Environmental Evaluation / SEA	
Applications	

2.4 Analysis and Conclusions

WRM Policies

In Macau, there are great concerns in the quality and consumption rate of drinking water, the average pollution index of coastal waters and the wastewater treatment. In order to solve the problem of recent poor drinking water quality, a long-term strategy, the “save water” concept, is considered to be included in the overall strategy of socio-economic development, while re-use of wastewater or irrigation with treated wastewater has also taken into consideration.

Compared to Macau, Hong Kong’s two main sources of water are from rainfall from natural catchment and supply from Guangdong. It is Water Supplies Department’s (WSD) scope of work to cover the whole process from the collection of natural yield from rainfall, the reception of raw water from Guangdong to the provision of a supply with a quality of accepted international standards to the users’ taps. WSD also supplies sea water for flushing purposes to over 80% of the population. For protection against flooding, sewage collection, treatment and disposal, it is under Drainage Services Department’s (DSD) jurisdiction.

For the sustainable development of Hong Kong, WSD has initiated a *Total Water Management programme* comprising key elements of new water resources, water reclamation, water conservation and water resources protection and management was initiated for better utilization of the different water resources.

Similar to Macau, Hong Kong, while is part of Guangdong province, has a neighbour city, Shenzhen, to the north. Effective transboundary cooperation is considered to be essential for the protection of inland water bodies.

EE/SEA

For the SEA/EE system in Macau, there is no formal provision made for a national system of SEA for policies, plans or programmes. The concept of SEA has not been integrated into decision making on any proposed policy, plan or programme yet.

While the SEA/EE system is under development stage in Macau, there are both statutory and non-statutory systems for PPP projects in Hong Kong. It may be a logical next step to consider:

- Combining the administrative requirements into the statutory system; and
- Providing further specific SEA requirements under the category of water resources management

2.5 Examples of Water Resources Management Policies / Actions or their Environmental Evaluation/SEA

Example MA-1 “Water for Life” Campaign	
Description of the Campaign	To show the awareness on the need for water conservation, the Promotional Team for Water Conservation, constituted by the Environment Council, Civic and Municipal Affairs Bureau, Government Information Bureau, and the Macao Water Supply Company, has organised regular and continuous activities in the long term, which forms this Campaign. ²⁴
Goal of the Campaign	The Promotional Team for Water Conservation hopes that with all these activities, from different perspectives, citizens will pay more attention to the relationship between humans and water, as well as the value of water resources and the respective need for its preservation and conservation. ²⁵
Activities under the Campaign	<p>Below shows some activities under the Campaign</p> <ul style="list-style-type: none"> • The first awareness activity – Carnival “Water for Life” is held from October 2006 to March 2007. All the activities in the carnival aim at disclosing to local residents information on the importance of saving water and good water consumption habits. Through a series of continuous and comprising actions of environmental awareness and education, under the motto "Water for Life", it is expected to raise population awareness, in long term, for the sustainable utilization of this resource as well as to deepen its knowledge through information disclosure.²⁶ • The inauguration ceremony of the exhibition – The exhibitions were displayed in several places across Macau. The exhibitions approached the development of water consumption in Macau, water pollution and consumption, works on water resources protection and still provided relevant information on the importance of water conservation. The team benefited from supportive officials for explaining residents on the content of displayed posters, and how to organize quiz games aiming at divulging information to population on the importance of water conservation.²⁷ The team aimed to disclose different viewpoints and sorts of relationships between humans and water resources in the exhibition, as well as the importance of water resources conservation so that population raises awareness on this matter.²⁸

²⁴ Referenced to “Campaign ‘Water for Life’ Press Release” from the website of The Environment Council of Macao Special Administrative Region, <http://www.ambiente.gov.mo/water/e/activities/12.asp>

²⁵ Referenced to “Campaign ‘Water for Life’ Press Release” from the website of The Environment Council of Macao Special Administrative Region, <http://www.ambiente.gov.mo/water/e/activities/12.asp>

²⁶ Referenced to “Carnival – ‘Water for Life’ Press Release” from the website of The Environment Council of Macao Special Administrative Region, <http://www.ambiente.gov.mo/water/e/activities/02.asp>

²⁷ Referenced to “Inauguration ceremony of the exhibition – ‘Water for Life’ Press Release” from the website of The Environment Council of Macao Special Administrative Region, <http://www.ambiente.gov.mo/water/e/activities/04.asp>

²⁸ Referenced to “Exhibition – ‘Water For Life’ at Jardim da Cidade das Flores Press Release” from the website of The Environment Council of Macao Special Administrative Region, <http://www.ambiente.gov.mo/water/e/activities/06.asp>