



# Sustainable Hotel Gardens in Cyprus: reducing waste water usage for landscaping and gardens



# About the project

- Sponsored by the **Co-operative Travel** , **The Travel Foundation** together with **Cyprus Sustainable Tourism Initiative**, have run a scheme for reducing water use in hotel gardens in Cyprus.
- The project has been executed by **mSolutions** in co-operation with **Vitaverde** since August 2011.

## Objectives:

- Reduce water consumption through the implementation of best practice measures relating to gardening.
- Promote best practice in gardening to other hotels, tourism businesses and residents through the dissemination of best practice guidelines and showcases.
- Besides the reduction of water consumption, promote a sustainable approach to tourism in Cyprus



# Who are we?

- **Msolutions is dealing with the promotion and application of sustainability** in all economic sectors but primarily in **touristic units**, through a myriad of projects ranging from Water Management, Energy Management, Waste Management, Beach Management to Fair Employee Relations – find more [www.msolutions.gr](http://www.msolutions.gr)
- We offer onsite and online workshops, training sessions, audits and fully comprehensive studies with **the aim to help businesses embrace sustainable practices whilst reducing their costs and upgrading their corporate image within their local community and abroad.**
- Our team comprises of **highly trained and experienced professionals** in environmental assessment and management.
- We are **ISO 9001:2008** and **ISO 14001:2004** certified.
- **Vitaverde** is an expert in construction of vertical gardens, roof gardens, interior gardens and gardens at different private and professional spaces.



# Methodology

1. Developing [auditing questionnaires](#).
2. In-depth auditing hotels.
3. Defining garden typologies.
4. Finding ways of reducing water consumption.
5. Determining Best Practices.
6. Developing Best Practice tool for hotel gardens' water management.
7. Workshop.
8. [www.thetravelfoundation.org](http://www.thetravelfoundation.org)



# Water problem & Hotel Gardens in Cyprus

- Over the last few years Cyprus has experienced a series of water shortages, particularly during the high tourist season. **Annual demand now outstrips supply.**
- There is an increasing reliance on **desalinisation plants** but they **can only provide 45% of demand** and their operation is energy intensive.
- In Cyprus, hotel gardens are an important aspect of the tourist industry and make up a **fundamental part of their facilities.**
- With a climate that supports outdoor activities for many months, most of the island's hotels have large areas dedicated as gardens, which **host activities** for both residents and visitors.
- Gardens constituting an important part of a hotel's architecture, is also dictated by **the Cypriot building legislation and the hotel regulations set by the state.**
- Research has indicated that gardens and landscaped areas account for **up to 22%** of a hotel's total water consumption.



# Audit findings

- Hotel gardens in many cases **are not designed taking into account the demands of each season and the local climate**, resulting in the majority of cases in the predominance of grass and exotic vegetation.
- In spite the fact that Cyprus is very rich in flowering plants, **hotels currently use only a small proportion** of them and these **do not include endemics**.
- The types and colours used are limited and **the final product is not representative of the rich plant variety Cyprus** has to offer.
- Gardens are **not being maintained correctly**.
- Maintenance procedures **do not follow best practice techniques** and these results **in high water consumption and maintenance costs**.
- Vast amounts of water due to high water consumption, result in **further strain on environmental degradation**.



# Audit findings

- In the majority of cases there **are no records of actual planting and irrigation.**
- In almost all cases separate **water consumption meter readings are not made** and consumptions are therefore not known.
- Most of the hotels have **no specific action plan regarding the maintenance and design or the aesthetic improvements of their gardens.**
- **Gardens do not have a specific budget** and analytical costing of their maintenance is not carried out, and in very few cases **the income that can be generated from renting out garden space** for weddings, parties etc has been calculated.
- The majority of the hotels **had their own team of gardeners** but very few collaborated with professional landscapers.
- In most hotels, the gardeners **are not being trained** regarding water management.



# Sustainable gardens

- Sustainability is a trend or a necessity?
- Can gardens be sustainable?
- Defining sustainable gardens.
- How hotels can benefit.





# Garden Typologies

- Inspection of the hotel gardens showed that they fall into a number of types, **depending on the way a particular garden is used by hotel staff and residents.**
- Garden typologies will be used as a **tool to develop best practice methods for each typology**, in a way that benefits the hotel financially and at the same time reduces the consumption of irrigation water.
- **Garden typologies:**
  - Passive recreation garden
  - Active recreation garden
  - Beachfront garden
  - Event garden
  - Demonstration garden
  - Children's garden
  - Private garden
  - Parking lots



# Passive recreation garden

- Areas reserved for passive recreation such as relaxing, sunbathing etc. next to the pools and near the bars, furnished by many sun beds, umbrellas and small tables.
- Make up a large percentage of the total size of the hotel garden.
- Usually artificially shaded in part, with the rest exposed to the sun.
- Have low biodiversity and mainly consist of lawn.
- Hard to maintain as they are in constant use throughout the tourist season and maintenance is prevented due to the scattered garden furniture.





# Active recreation garden

- Areas designated to host sports, games and outdoor activities.
- Due to this fact and for ergonomic reasons most of the area of these gardens is only covered with lawn.
- Have very low biodiversity.
- Usually have rows of bushes or substantial plants around their borders.
- As in the passive recreation garden, maintaining the lawn has a high water irrigation cost and uses a lot of energy.





# Beachfront garden

- Seaside areas right next to the sea which serve as a pathway to the water.
- Furnished with sun beds and parasols.
- Only used during the day for swimming and sunbathing and are usually deserted after sundown.
- Have almost no plants at all, except for solitary palm trees.
- However in some cases they are covered by lawn which has a very high cost in maintenance in order to stay green.





# Event garden

- Areas used for hosting social functions.
- Very large areas, set somewhat apart from the hotel main buildings and usually used for weddings, engagements, galas and other such events involving large numbers of invitees.
- Add a big asset to the hotels (event tourism).
- Hard to maintain, as they consist mostly of lawn and scattered flowerbeds.
- Very important to look as attractive as possible as the events they host are invariably photographed or filmed and result in revenue.





# Demonstration garden

- Planted areas that are constructed for display purposes.
- Usually near the entrances of hotels, next to footpaths and internal road networks or near the swimming pools and bars.
- Even though these parts of the garden play a demonstrable role they often lack biodiversity.
- The plants currently used are usually sub-tropical, with an emphasis on palm trees.
- Tend to be sited on small plots hard to reach and often virtually impossible to maintain.
- Should be attractively designed.





# Children's garden

- Areas designated to the children.
- Usually consisting of lawn and a few trees and completely lacking in biodiversity
- Mostly isolated from the other parts of a hotel garden, adjacent to indoor daycare centres where parents can drop off their kids for an hour or two.
- Generally underused since their lack of plants, activities and beauty mean they have little to offer the children they are intended for.
- Could be redesigned as an educational garden.





# Private garden

- Isolated patches of garden attached to the executive rooms of the hotels so that guests in exclusive accommodation can enjoy their own small private space right outside their rooms.
- Mainly used for passive recreation such as sunbathing and relaxing and thus possess some furniture for these purposes.
- Have a small area of lawn in them and are given some measure of privacy by hedges
- Very hard to maintain as they are not connected to the main irrigation system.
- If attractively designed they will enable the hotel to charge higher rates for executive rooms and suites.







# Parking lots

- Even though parking lots cannot be considered gardens they often have a variety of plants for shade.
- Are usually on the same side as the entrance to the hotel and thus seen by many people who walk by.
- Often the first impression guests get of the hotel, and it should aim to look as far as possible like a garden.





# Best Practices Tool

- Suggests the best practices that your hotel should implement in order to reduce the water usage for landscaping and gardens.
- Computes the required data, depending on garden typology and suggests a series of best practices in order of significance for each site, based on the type of plants, irrigation systems and all other parameters affecting the water usage in hotel gardens.
- Monitors water consumption (m<sup>3</sup> and cost) according to water bills during the year.
- Presents the native plants that should be used in hotel gardens, as they are naturally adapted to use less rainfall and at the same time are still very attractive, making them ideal for a relatively dry country as Cyprus.
- Very easy to use, available in Greek and English, accompanied by best practice guide.



# Best Practices

In order to determine best practices for hotel gardens' water management, a large variety of factors should be taken into consideration:

- The garden design
- The irrigation system
- The species of plants used in the gardens
- The management of microclimatic factors
- The soil type and quality
- Nutrients and fertilization
- Hardscaping
- Mulch
- Maintenance
- Composting



# Conclusions

**There is an urgent need for the introduction of a new philosophy and way of thinking when designing, creating and maintaining hotel gardens, the benefits of which are multiple, practical, environmental and financial.**

## **Economic Benefits:**

- Decrease in water costs through water conservation.
- Decrease in maintenance costs through organization.
- Increased revenues from the use of improved gardens for social functions.
- Increase in customer satisfaction.
- Decrease in the cost of planting new vegetation as the use of exotic plants is restricted.

## **Practical Benefits:**

- Good maintenance practices that facilitate upkeep.
- Limited use of grass and creation of small gardens that generate many maintenance problems
- Better function of water supply network due to requirement limitations

## **Environmental Benefits:**

- Water conservation
- Moderation of water use during period periods
- Preservation of underground water table levels
- Support of local plants and enhancement of biodiversity