ReNature Training School
Group 4 Project Proposal

Designing Nature-based (NbS) Solutions for Ta' Qali Park

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Study Area

Ta' Qali is located in central Malta and adjacent to the towns of Lija, Attard and Mosta. It is a wide open space that includes the crafts village, the national football stadium and vegetable markets, and it is surrounded by agricultural areas. The National Park is a very popular recreational area and a well-known tourist destination.

In 2006, the Ta' Qali Action Plan aimed to reorganize the park to establish new recreational areas and sports facilities. Planning policies were implemented to make land available to accommodate new and existing recreational areas and sports facilities whilst separating and maintaining non-recreational land uses that may cause adverse impacts on these areas. Major impact activities that constitute an unacceptable environmental impact were supposed to be relocated. This action plan was further revised in 2012 and 2020.

Key Policy Goals and General Strategy

The main goal of this proposal was to address the main challenges in Ta' Qali National Park, which include noise pollution, urban heat island, stormwater runoff, traffic and limited parking capacity. The noise from the surrounding roads was causing disturbance in the park and further aggravated by traffic. Development in the area caused the urban heat island effect and required more parking spaces to accommodate visitors in the park. This development also increased paved surfaces and concrete infrastructures that lead to stormwater runoff.

Key policy goals were identified in order to address these challenges. First, the park would be designated as a "quality" commercial destination, which will incorporate nature-based solutions (NbS) to improve and enhance the park, together with landscape enhancement and environmental improvement. Through NbS and innovative and sustainable solutions, impacts of new commercial buildings and parking structures

could be reduced. The opportunities for recreational activities and sports in the park should also be optimized and promoted.

Proposed Interventions

We proposed the implementation of NbS to provide environmental, social, economic benefits and to help build urban resilience. The proposed NbS, their corresponding areas of intervention and the ecosystem services they can deliver are listed in Table 1.

Proposed NbS	Areas of Intervention	Ecosystem Services
Green infrastructure	Industrial/commercial areas	
Landscaping (planting of trees and shrubs)	Recreational areas	
Sustainable Parking	Industrial/commercial areas	
Energy Efficient Buildings	Industrial/commercial areas	

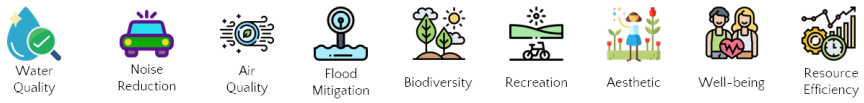

Table 1. The proposed NbS for Ta' Qali National Park.

In the industrial and commercial areas, we propose to build new green infrastructures, sustainable parking spaces and energy efficient buildings (Figure 1). Community rain gardens and urban orchards may be constructed in the informal gardens to foster social interaction among local residents and to provide an additional source of water for the proposed green infrastructures in the park. We also recommend planting native trees and shrubs to redesign recreational areas, particularly in the informal open spaces and the formal garden. In addition, a constructed wetland is also proposed in the formal garden, where native plant species can also be planted.

Permeable paving to support a more sustainable drainage and green barriers composed of indigenous and archaeophytic trees and vegetation (e.g. *Laurus nobilis*, *Myrtus communis*, *Hedera helix*, *Pinus halepensis*, *Quercus ilex*, etc.) as well as carports with solar panels are also suggested for the sustainable parking spaces. The rehabilitation and restoration of the Ta' Qali National Park are key strategies to deliver a number of ecosystem services, including improving water quality, noise reduction, improving air quality, flood mitigation, supporting biodiversity, providing recreational spaces, enhancing the park's aesthetics, and contributing to the overall well-being of both local residents and tourists.

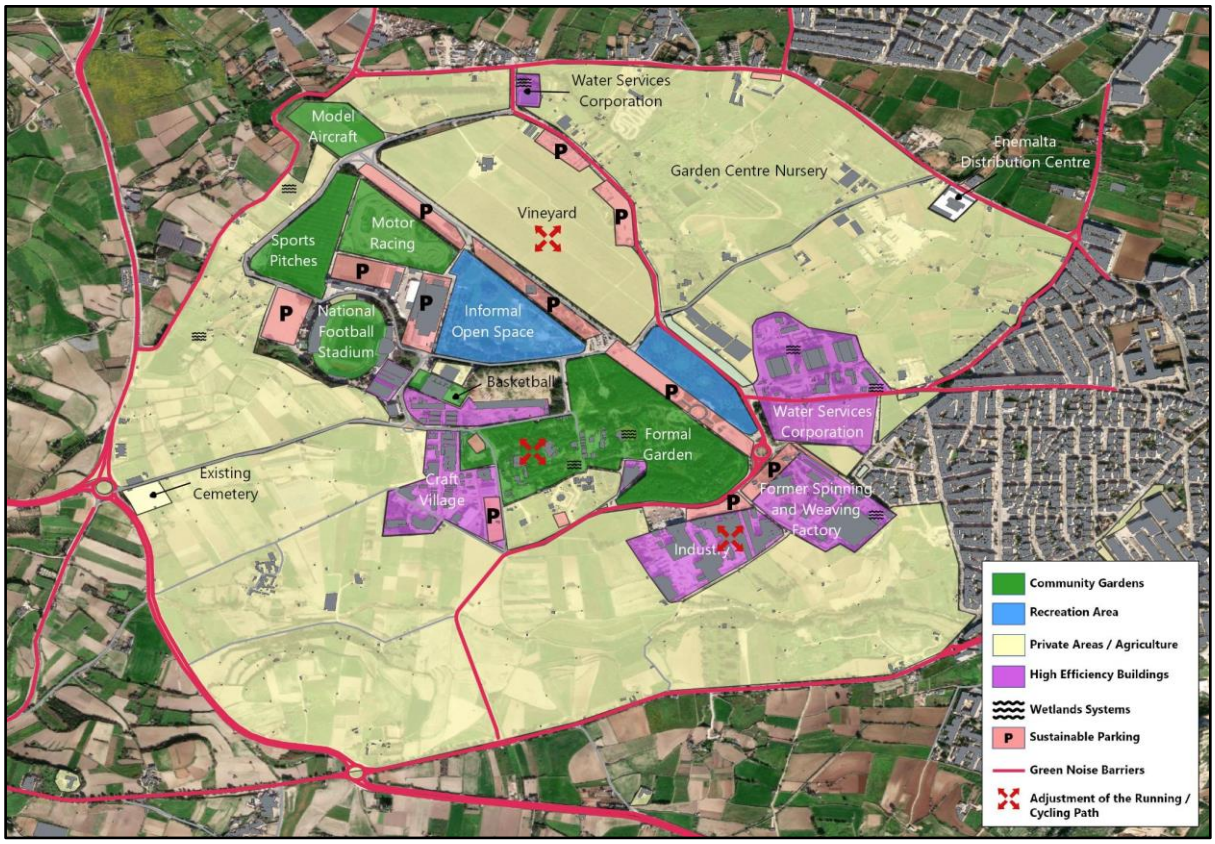

Figure 1. Identified locations where the selected NbS will be implemented.

Planning Instruments and Stakeholder Analysis

We identified several policy instruments related to the implementation of our proposal. Our recommendations in the proposal can greatly support urban planning, specifically, in determining preferential zoning, adherence to the existing action plans and recommended land use, supporting ecosystem services assessments and developing strategies in integrating NbS at the local and national scales. From these contributions to urban planning, regulatory and financial instruments can be created, such as the formulation of criteria for applying and receiving grants from the government and developing the suitable technological requirements for NbS. At the national level, our proposal can also contribute to the policies on climate change and the National Flood Relief Project through the suggested storm water management strategies. Finally, through the proposed NbS, we can increase environmental awareness, support environmental education and strengthen the community by shared responsibilities that all relate to voluntary instruments.

We identified two main disadvantages in the implementation of our proposed interventions. The long-term maintenance costs might be too high and therefore, we encourage community participation in the maintenance of the green infrastructures. A second disadvantage could be that the selected NbS could increase the water demand in the park. In this case, additional water supply from the rain gardens could be used.

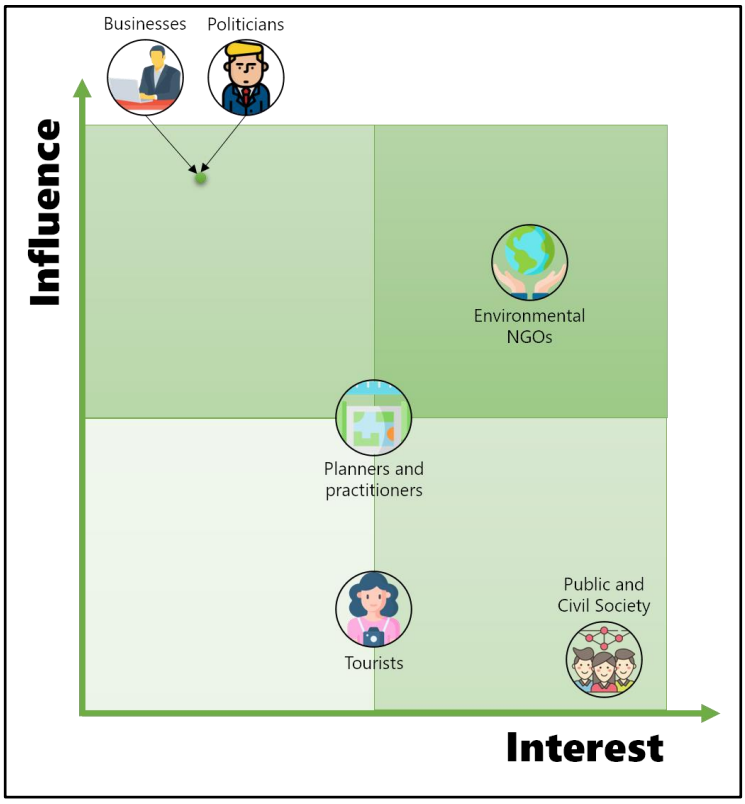

Figure 2. The potential influence and interests of different stakeholders.

Different stakeholders have varying interests and influence in the implementation of the selected NbS (Figure 2). We consider politicians and businesses to be the most influential, yet with a low interest in NbS, while the general public and civil society have the highest interest but may potentially have little influence in the implementation. Planners and practitioners have moderate interest and influence, on the account of their limited capacity to operate in terms of costs and contractual obligations. On the other hand, environmental NGOs might have more influence and interest in the realization of the proposed NbS due to their strong advocacy and given the increased attention to global environmental issues. Lastly, tourists may be moderately interested and may have low influence, given that they are only in the park for short visits.

Conclusions

The selected NbS for Ta' Qali National Park can help address the identified challenges on noise pollution, urban heat island effect, traffic and parking, and stormwater runoff. These NbS can also support the key policy goals designating the area as a "quality" commercial destination that features attractive landscapes, modern sports and recreational facilities and sustainable solutions that reduce the adverse impacts of development and support the environment. Collaboration among the different stakeholders is crucial in the implementation of these NbS. These NbS must also take into account the trade-offs among stakeholders and differences in co-benefits perception. These solutions must also be aesthetically appealing to the local residents and serve multiple functions that can encourage community involvement for the long-term maintenance of the park.