

## Chapter 8 Crown Village Destination Project (B3)

### 8.1 Project Brief

The Project aims to convey a sense of meaning and arrival for visitors to the Bcharre area together with orientation information, to raise the appeal of the crown villages and towns for tourism and recreational purposes and to improve its infrastructure to handle a growing volume of visitors in an environmentally sustainable way.

1. Project Title	<b>B3 - Crown Villages Destination Project</b>
2. Objectives	(1)To enhance the destination value of key villages on the rim to stimulate services economy; (2)To resolve sewage pollution of the Qadisha valley and; (3)To provide activities information and related services to visitors to encourage their stay and spending.
3. Project Components	-Bcharre town beautification -Gibran House and Museum renovation, visitor information -Gateway viewpoint(Hadath el Jibbe) and roadside viewpoints -Interpretive signage on key streets, routes for pedestrians -Sewage treatment plant for Bcharre and Hadchit towns -Micro industry support -Culverts for animals to link Qadisha Valley to Ehden Reserve
4. Location	Bcharre Qaza, Bcharre, Hadchit & Hadath el Jibbe
5. Main Implementing Organization	Municipalities [Hadchit municipality for sewage treatment]
6. Main Beneficiaries	Local services industries and other businesses
7. Possible Donor Support	World Bank, Lebanese foundations, European aid agencies (refer to table 8.7.1)
8. Project Cost	1 US\$180,000 Renovation of Bcharre town plaza 2 US\$1,280,000 Infrastructure including sewage treatment 3 US\$5,000 Promotion <b>Total: US\$1.47million</b>
9. Implementation	2004-6
10. Description	
Activities	<u>Bcharre town</u> (1)Townscape: Selective façade renovations, street lighting & furniture, signage, plaza upgrading, visitor information kiosk and signage along the “vital spine” of 1,000 meters linking the lower village to the upper village. This project will draw tourist traffic through the heart of the town, extend visitor stay and spending in tourist oriented services. (2)Gibran House: Consolidation, improvement of environs and provision of interpretive information. <u>Road works</u> One or more viewpoints with parking for vehicles will be added to roads in the Bcharre vicinity. Culverts under the Bcharre-Hadchit road are to be installed to enable animals to safely pass from the Ehden Reserve into the Qadisha Valley and extend their natural environment. <u>Sewage treatment</u> A plant for primary & secondary treatment of raw sewage from both Bcharre and Hadchit towns will be built at a low point between the two.

	<p>Collection networks for both towns will be included.</p> <p><u>Hadath el Jibbe</u></p> <p>(1)Town center works: Within the context of historic preservation, town is to undertake light improvement in its square improving pedestrian areas, adding street furniture, an information kiosk, shuttle stop and lighting.</p> <p>(2)Town periphery: It will add a parking lot, a viewpoint, pergola with explanatory panel, and performance space overlooking the valley.</p> <p><u>Micro industry support</u></p> <p>A space for a farmers market will be located near the parking. An arts &amp; crafts center will be installed in the town center.</p>
Expected Results	<p>-increase in tourist-oriented businesses in the crown villages/towns</p> <p>-reduction in pollution level of Qadisha River</p> <p>-rise in animal species diversity of the Qadisha Valley</p>
Staffing and Management	Municipalities will to manage the works with an internal project management unit according to donor's requirements.
Training	None required.

## 8.2 Product Design

### 8.2.1 Design Considerations

#### (1) Target Markets/clientele

The mix of target user groups for this project is the same as for the Qadisha Cedars program explained above. The only difference is that since this one excludes the heritage areas and instead focuses on the villages overlooking the valley, the nature-based segment has been removed.

#### (2) Key Resources to be Utilized/enhanced

The philosophy of this project is to offer a range of tourist services in the villages along the "crown" of the valley to extend the average visitor stay and increase visitor spending directly into the economies of these villages. It calls for selective improvements to the villages themselves and also along the road linking them, where stretches having scenic views can also be equipped for sight-seeing. This visitor management approach steers all of the user groups to the villages, and others like the youth/school groups, religious visitors and nature-based ones, selectively into the Qadisha Valley.

#### (3) Social Considerations

The provision of increased attractions and services in the villages will create new job opportunities both full year and seasonal in nature and also full time as well as part time. This reflects the seasonality of the tourist business. Some groups to benefit will include women, families with vacation homes in the area, and students seeking seasonal employment in the area.

#### (4) Environmental Impact

This project, and its companion project, the Qadisha Scenic Heritage Trail, would create opportunities for visitors to appreciate the natural and cultural beauty of the Qadisha

Valley without direct intervention into the valley. It would resolve the sewage pollution of the Qadisha Valley from Bcharre and Hadchit towns. Renovation of existing tourism facilities and installation of viewpoints would improve the living environment of the local people as well.

#### (5) Management Considerations

Project components are mostly physical in nature, and thus managed effectively by respective municipalities. The project has a component for micro industry support, i.e. farmers market and an arts and craft center. The latter may be administered by a relevant business association.

#### (6) Institutional Aspects

The project would be implemented by the municipalities on the valley crown [rim]. Inter-municipality issues, such as the location of roadside viewpoints and culverts and the micro-industry support, should be resolved at the Bcharre Tourism Development Council.

### 8.2.2 Product Formulation

Product formulation for different user groups is summarized in Table 8.2.1. User groups are listed in the table more or less in the order of significance in terms of visitor volume, and relevant activities/products are indicated for each group. The set of target user groups defined for project B1 is the same for this project. The key difference is the absence of the nature-based user group, which does not focus its activities in urban areas.

**Table 8.2.1 Product Formulation for Target User Groups**

Target Users [visitor focus]	Key themes [product focus]	Relevant Activities, product [matching <i>experiences</i> ]	Travel pattern
Beirutis, expats leisure	1 natural beauty	1 scenic overlooks & viewpoints, interpretive signage, strolling	A] weekend, holiday
	2 living heritage	2 Gibran Museum, crafts shops, events of religious, historic themes like <i>Mar Charbel festival, Apple festival, Cedars festival.</i>	excursions B] extended stays with local families
	3 relaxation	3 souvenir shopping, restaurants, carriage rides, sight-seeing	
Religious visitors	devotional experiences	Visits to churches, monuments & shrines in the towns, admiring Qadisha valley from the crown	-parish groups on feast days -family excursions
Cultural [tour packages]	1 natural beauty	1 scenic overlooks & viewpoints, interpretive signage	A] full-day stop on inclusive tours [IT]
	2 living heritage	2 Gibran Museum, crafts shops, events of religious, historic themes like <i>Mar Charbel festival, Apple festival, Cedars festival.</i>	B] overnight stop on IT
Diaspora	1 natural beauty	1 scenic overlooks & viewpoints, interpretive signage	A] weekend, holiday

	2 living heritage	2 Gibran Museum, crafts shops, events of religious, historic themes like <i>Mar Charbel festival</i> , <i>Apple festival</i> , <i>Cedars festival</i> .	excursions B) extended stays with local families C) overnight stop on IT
	3 relaxation	3 souvenir shopping, restaurants, carriage rides, sight-seeing	
School & youth groups	1 living heritage 2 natural beauty 3 hiking	1 Gibran Museum, village exploration 2 & 3 nature walks, scenic overlooks & viewpoints, interpretive signage, picnic & campgrounds	Seasonal programs with schools, youth organizations
Winter skiers [ski season]	1 living heritage 2 natural beauty	1 Gibran Museum, crafts shops, local restaurants, village life 2 scenic overlooks & viewpoints, interpretive signage, Cedars-Qadisha cross-country trails	Random visits during ski season
Regional Arab leisure [summer season; from Beirut, Damascus, Jordan]	1 natural beauty 2 relaxation 3 living heritage	1 nature walks, scenic overlooks & viewpoints, interpretive signage 2 souvenir shopping, restaurants 3 crafts shops, events of historic & cultural themes like <i>Apple festival</i> , <i>Cedars festival</i> .	A) family motor trips B) IT groups for part day visits

Source: JICA study team

## 8.3 Preliminary Design

### 8.3.1 Facilities Planning

This facilities planning involves the renovations of the town center areas of Bcharre and Hadath el Jibbe. Details follow.

#### (1) Renovation of Bcharre Town Plaza

To serve visitors to Bcharre town center better, the town plaza extending between St Saba Church, which is a symbolic church of Bcharre, and the Gibran House is renovated. Then, a relaxing place for locals as well as visitors is developed. Work programs for this plan are described in detail in Table 8.3.1, and architectural plan is shown in Figure 8.3.BT.

**Table 8.3.1 Programs of Renovation of Bcharre Town Plaza**

Programs	Notes
Renovation of Gibran House	Adapted for use as visitors center and museum. Renovation area: approximately 200 square meters.
Renewal of pavement	Work area: approximately 200 square meters.
Construction of fountain	Connected with cascades
Construction of cascade	Constructed in the middle of plaza. This part is a zone giving the direct views of St Saba Church and the Gibran House.
Setting of street furniture	Four pergolas (module: 5m*5m, wood structure, four units are installed.), four trash cans, and four benches
Footpath	Promenade zone
Plantation	Approximately 300 square meters.
Plaza extension work	Part of road space is closed for pedestrians and repaved for pedestrians. Area of pavement: approximately 500 square meters.
Adaptive reuse of unused structures	Approximately 150 square meters.
Signage fabrications	two signboards (a town guide map and a directional signs)

Source: JICA study team

(2) Renovation of Town Center of Hadath el Jibbe  
Hadath el Jibbe is the gateway to the crown villages and the Qadisha Valley for visitors entering from Chekka or Beirut. This project proposes to construct a visitor information kiosks in the town's center large enough for two persons, providing right information at the gateway. The work program is described in detail in Table 8.3.2.

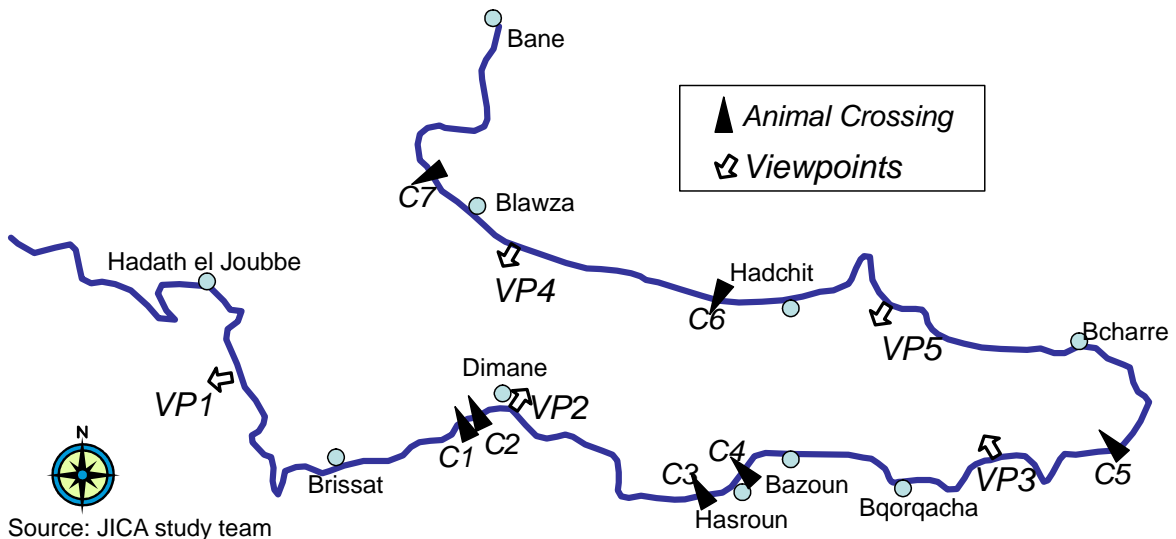
**Table 8.3.2 Program of Renovation of Hadath el Jibbe Town Plaza**

Components	Notes
Construction of gateway visitors kiosks	Located around the crossroads of two directions: Laqlouq and crown villages for drivers from Chekka. Approximately 6 square meters of structure (Kiosk type unit) is constructed as visitors center. Staff is not permanently stationed.
Renewal of pavement	Paved for above visitors center. Approximately 20 square meters of space is paved for use of visitors center. Some furniture is provided on the paved area.

Source: JICA study team

### 8.3.2 Infrastructure Design

The project would involve as infrastructure development, (1) five roadside viewpoints and (2) animal crossing (rehabilitation of existing culvert). The location of these facilities is illustrated in Figure 8.3.1. (3) A sewage treatment facility for Bcharre and Hadchit is proposed also.



Source: JICA study team

**Figure 8.3.1 Location of viewpoints and animal crossings**

#### (1) Viewpoints

A viewpoint with a parking lot commanding panoramic views of the Valley with interpretive boards would be a point of interest for the tourist. Traffic signage and paints to guide passengers to viewpoints shall be equipped for both directions.

One large site with six passenger car parking capacity (VP1) and four medium sites with three parkings along the traverse road (VP2-VP5) will be developed as shown in Figure 8.3.1. Figure 8.3.2 illustrates views from the sites. The works contain road shoulder

extension earthwork, pavement work, and installation of tourism facilities including signage and presentation. The large site locates at the gate of the Valley from Beirut, near Hadath el Jibbe to offer the tourist a small break after a long drive.

(2) Animal Crossing

Existing culvert structures shall be renovated to enable animals to cross safely, and to reduce animal kill on the traverse road, as part nature conservation activities. Considering recommendations of the IEE and the EIA, intended animals are small nocturnal animals including fox, small boar, field mouse, etc, and capacity for large animals like deer or boars is not necessary. The existing culverts shown in Figure 8.3.3 need site cleaning and tree planting to attract the animals. Particularly, at culverts No.4 and No.6, rocks inside the culverts shall be removed to create a passage for high water season. The location of the site is also depicted in Figure 8.3.1.

(3) Sewage Treatment Facility

As part of the project the sewage treatment facility including existing collection pipe network rehabilitation shall be implemented for Bcharre and Hadchit urbanized areas. According to the result of the EIA, two separate treatment facilities may be installed for the two areas instead of one common facility proposed by the original plan. The planned service population is 15,000 persons for Bcharre and 5,000 persons for Hadchit, calculated based on the forecasted population in summer including overnight tourists.

Photo 8.3.1

Present Condition of Bcharre Town Plaza





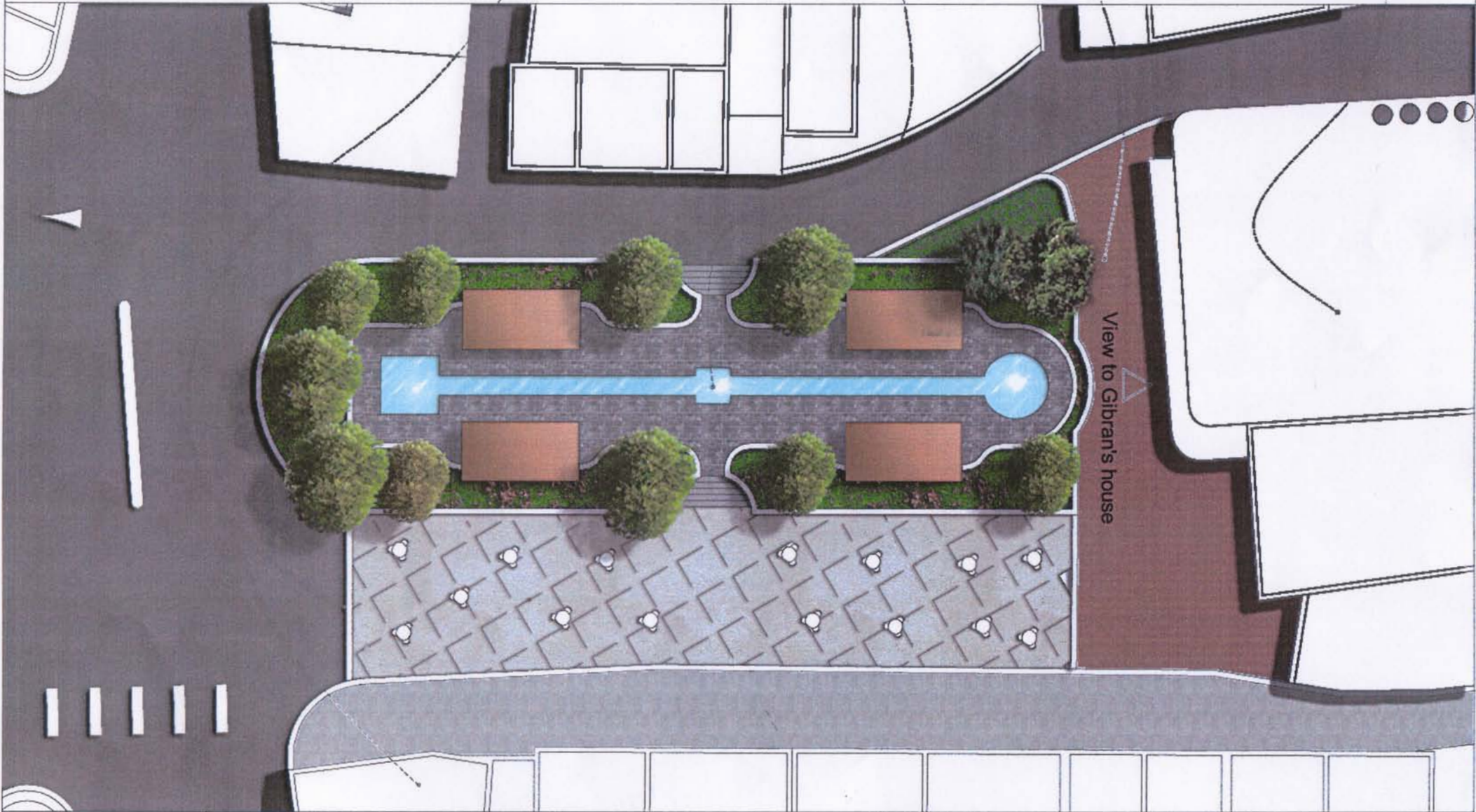
**Plaza extension**

Open cafe  
Craft and souvenirs shop  
(use of existing road)

**Plaza renovation**

**Pavement renewal**

**Gibran's house**



**8.3.BT**

Renovtion plan for Bcharre town plaza, Bcharre

Notes:



**View Point 1: Hadath El-Jibbe**



**View Point 2: Dimane**



**View Point 3: Bcharre**



**View Point 4: Blawza**

**Figure 8.3.2 View Panoramic Views of Selected View Points**





**Culvert 1: Dimane**



**Culvert 2: Dimane**



**Culvert 3: Hasroun**



**Culvert 4: Hasroun**



**Culvert 5: Bcharre**



**Culvert 6: Blawza**

**Figure 8.3.3 Existing Animal Culverts Conditions**

## **8.4 Marketing and Promotion**

### **8.4.1 Current Marketing and Promotion Activities**

There are a number of villages on the crown (rim) of the Qadisha Valley, but most of them are not recognized as tourism destinations other than Bcharre and Hasroun. Some marketing and promotional activities are performed at those two areas. The main existing promotional resources are listed in Table 8.4.1.

**Table 8.4.1 The Current Main Promotional Materials**

Type	Contents
Pamphlets	<ul style="list-style-type: none"> <li>➤ Two pamphlets, “the Cedars” and “Qadisha” (96*210mm, 12 pages, 2002) were printed by MOT in seven languages. (Very brief information about the Crown villages is introduced in it.)</li> <li>➤ A pamphlet, “Tourism in the Besharry Region-the Cedars” (290*195mm, 32 pages, 2000) was printed by BTDC in three languages (Some of the towns are introduced in there).</li> </ul>
Posters	➤ A few posters of panoramic views of Bcharre area are printed by MOT.
MOT Photo Library	➤ Around 230 photos (panoramic views/village life: building .people. culture/ nature /etc)
Others	➤ Some villages’ information/photos are included in MOT booklets/guidebooks calendars /etc.

Source: Compiled by the JICA Study Team based on hearing and surveys.

The following are the main issues regarding the on-site promotion of the Crown villages:

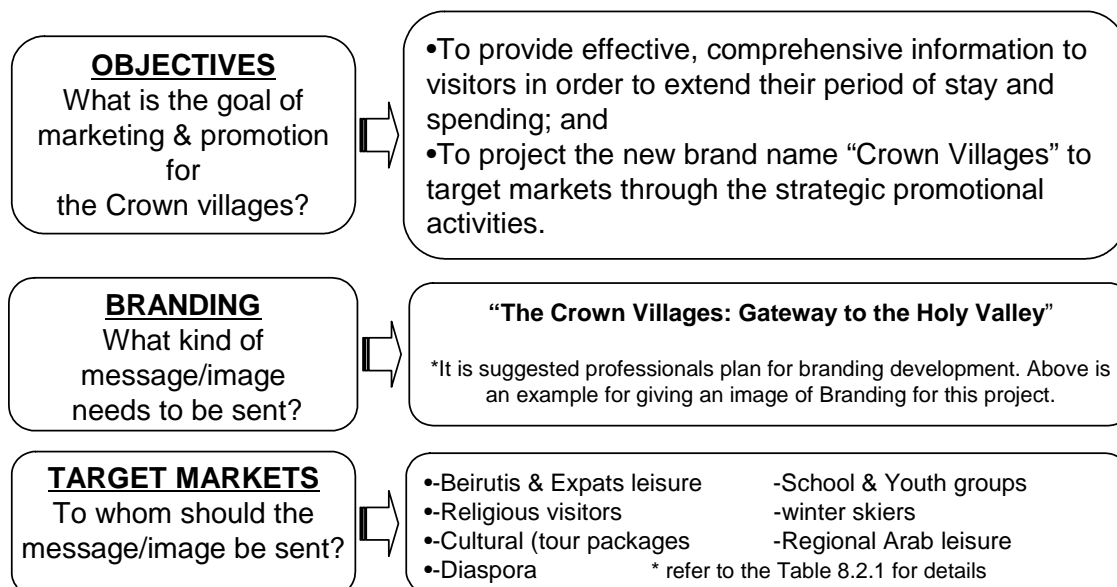
- Lack of image for the area and attractions in tourism market; and
- Poor quality of information materials (guidebook/map/information).

### 8.4.2 Proposed Marketing and Promotion Plan

#### (1) Strategy

In line with the objectives of this project, proposed marketing and promotional activity focuses only on on-site marketing and promotional issues of the crown villages as presented below.

**Figure 8.4.1 Strategy for Marketing and Promotion**



Source: JICA Study Team

(2) Promotion Plan

According to the strategy, the promotion activities and printed materials should be prepared as presented in Table 8.4.1, especially focusing on providing information on-site.

**Table 8.4.1 Suggested Promotion and Communication Tool/Materials**

Contents	Suggested Actions	Main Target Markets
<b>Promotional Actions</b>		
Welcome Guides	➤ Post the welcome guides at the entrance kiosks during high season (July–Sep) to give visitors general and selected information on charm of the Crown villages, manners and safety issues, directions and etc.	-On-site visitors -Passage visitors
<b>Printed Materials</b>		
Leaflet	➤ Print the handy-size leaflet (e.g. A4 -1/3 double-sided copy, 2 colors) that gives visitors all-round information about the attraction of each village and clear directions. Taking consideration of target users, printing in various languages (Arabic, English, French, German, Spanish, Portuguese and Japanese) is desirable. ➤ Distribute it at the entrance of the each site and at visitor centers.	-On-site visitors

Source: JICA Study Team

(3) Implementation Approach for Promotion

In coordination with the MOT Project Implementation Unit (PIU), the crown village destination project director will be responsible for undertaking the management of this particular subject area. Regarding the main promotional activities for the entire Bcharre area, which includes the crown villages, Qadisha Valley and the Cedars, BTDC will be in charge of the implementation with the assistance of the MOT PIU. BTDC will be strengthened by a companion project (B6) presented in Chapter 9.

**8.5 Implementing and Operating Organizations**

Project components such as the gateway facilities at Hadath el Jibbe, the roadside viewpoints and the urban works for Bcharre town should be reviewed and approved for their design by the Bcharre Tourism Action Council which by definition will contain representatives from the relevant municipalities. Where works are located within or near the heritage site boundaries or where works may impinge upon the viewshed from the valley or into it, coordination will be required, through the Advisory Committee of the PIU, where all the stakeholders, including the Patriarchate as a special members, are represented. The early establishment of the Qadisha Cedars Authority would facilitate such coordination.

## 8.6 Cost Estimates

### 8.6.1 Tourism Facilities

Costs of the tourism facilities to be provided by the project are summarized in Table 8.6.1. The total cost is estimated at US \$ 178,880.

**Table 8.6.1 Cost Estimate for Tourism Facilities**

Unit: US \$

(1) Renovation of Bcharre Town Plaza				
Items	Quantity	Unit Cost	Cost	Notes
1.Gibran House renovation for visitors information center and museum	200 sqm (Floor Area)	200	40,000	Interior finish work of an existing building
2.Pavement renewal	200 sqm	50	10,000	
3.Fountain construction	All units	3,000	3,000	Inc. work for water circulation system
4.Canal construction	30 m	200	6,000	Inc. work for water circulation system
5.Four pergolas	4 units	5,000	20,000	One unit: 5m*5m, solid wood structure
6.Footpath	100 m	100	10,000	
7.Plantation	300 sqm	50	15,000	Evergreen plants
8.Plaza extension work	500 sqm	20	10,000	Renewal work of existing road space
9.Renovation of the structures for craft center, souvenir shops and café)	150 sqm	250	37,500	Renovation of the existing structures
10.Signage fabrication	2 units	3,500	7,000	Design and construction costs
11. Trash cans	4 units	220	880	Metal made
12.Benches	4 units	1,125	4,500	Wood made
13.Lighting	All units	5,000	5,000	Lights for some parts of Town Plaza
<b>Sub-total (1)</b>			<b>168,880</b>	
(2) Renovations of Hadath el Jibbe				
Items	Quantity	Unit Cost	Cost	Notes
1.Gateway visitor center construction	One unit	8,000	8,000	kiosk size: 3m*2m, metal and wood made
2.Pavement	20 sqm	100	2,000	Excavation, land filling, and pavement
<b>Sub-total</b>			<b>10,000</b>	
<b>Grand Total</b>			<b>178,880</b>	

Source: JICA Study Team

### 8.6.2 Infrastructure Costs

Costs of infrastructure for the project are summarized below.

**Table 8.6.2 Cost Estimate for Infrastructure**

(USD, in 2003 prices)	Design	Construction	Maintenance
(1) Viewpoint	10,412	104,121	500
(2) Animal Crossing	1,500	15,000	500
(3) Sewage treatment system	115,600	1,156,000	160,780

Source: JICA Study Team



The detail design cost includes a consulting fee for bidding and detail design at 10 %of the construction cost. The construction cost includes site work, materials, personnel, transportation to the site. The maintenance costs are incurred annually for electricity, operation, personnel, cleaning, and management resources.

## **8.7 Scheduling and Financing**

### **8.7.1 Strategies for Obtaining Funds**

These villages along the Qadisha Valley's crown serve as its "showcase" or "forecourt" for this World Heritage site, and will be handling a rising number of visitors, generating greater pressures on their infrastructure. In this context, several aspects about the character of this program may be emphasized in efforts to identify funding source for different components.

- **Poverty alleviation:** The area continues to lose its youth due to a lack of economic opportunity. It lacks viable major industries.
- **Cultural resources management:** The towns need to stop polluting the Qadisha river with their untreated wastewater and solid wastes. A sewage collection and treatment network is required.
- **Urban infrastructure:** These are all rural/secondary communities with major infrastructure deficiencies to correct.
- **Cottage industries/micro-enterprise support:** Small restaurants and shops and crafts makers of the villagers all require guidance for production expertise and marketing.
- **Training/capacity building:** Several entrepreneurial groups need capacity-building support to improve quality and tap new markets.

### **8.7.2 Possible Donors**

Table 8.7.1 presents possible donors for different components of this project.

**Table 8.7.1 Possible Donors**

Items	Possible Donors
Bcharre town beautification/ Town plaza improvement/ Roadside viewpoints, culverts/ Gateway viewpoint, parking (package)	World Bank
Sewage treatment plant & collection network	World Bank European Union (EU)
Gibran house & museum renovation	Japanese Embassy (Grassroots Grant) Audi Foundation Banque Audi Banque de Lidan Banque Saradar, sal Fares Foundation
Farmers market & crafts center	Agence Francaise de Dev. (AfD) Germany (GTZ) Italian Aid Agency Swedish Aid Agency Swiss Aid

Source: JICA Study Team

### 8.7.3 Scheduling

The general schedule from initial search for funding to launch of operations is envisioned as follows.

Year	2004	2005	2006	2007	2008-
Items					
funding negotiation & agreements					
Design work for Bcharre urban facilities and extending study gateway viewpoints Hadath el Jibbe by Bcharre Municipality					
Design, sewage treatment facilities for Bcharre & Hadchit Municipalities					
Construction Bcharre urban facilities					
Initiation of micro industry support by Bcharre Municipality					
Construction of sewage facilities by Bcharre and Hadchit Municipalities					

Source: JICA Study Team

## 8.8 Environmental Impact Assessment

### 8.8.1 Impact on Natural Environment

Four main types of impacts need to be considered to ensure that no significant negative impact would result from the proposed tourism development plan. These are the impacts on 1) natural and cultural heritage, 2) water resources, 3) air quality, and 4) noise. Assessment results for air quality and noise are the same as presented in Section 7.8.

(1) Impact of Individual Components on Natural and Cultural Heritage

The impacts on natural and cultural heritage are assessed at the level of each individual activity suggested. It is to be noted that caution would be taken during the establishment of the tourism related activities. Regarding endangered species, no impacts are expected as none exists in the sites proposed for infrastructure.

1) Viewpoints

The viewpoint on the road between Tourza and Hadath el Jibbe needs to be properly located as the road is narrow and winding. Other viewpoints are not expected to have significant impacts on biodiversity, as they are located on widened road sides and will not require additional infrastructure work.

2) Culvert for animals to link the Qadisha Valley to the Ehden Reserve

Few animal kills were reported during the field investigation on the roads in the study area, including the road between Qnat and Tourza, and at-risk animal species have not been identified. Some nature advocates in the study area indicate that the wild boar has been absent from the Valley for more than 50 years. It has been recently re-introduced in the Horsh Ehden Nature Reserve and Wadi Al Karakir.

Construction of a new culvert in existing roads may have drastic impacts on the biodiversity along the road. No research has been undertaken in Lebanon with respect to the efficacy and use of drainage culverts by wildlife. Construction of a new culvert on the Hadchit-Bcharre road must be subject to careful consideration, especially in terms of size and location. Populations have been cut off for a while now, and opening new culverts, especially one for larger size mammals might disrupt the ecological equilibrium of the valley.

(2) Culvert Alternatives for Animals

To assess the impacts on biodiversity, analysis of alternatives was undertaken for "Culvert for Animal Passage" in the study area. Three alternatives are examined for enhancing animal passage and improving habitat connectivity between the Ehden Reserve and the Qadisha Valley. The alternatives 1 and 2 as presented below are recommended.

1) Construction of culverts (Original Plan)

The construction of a new culvert on an existing road will have significant impacts on soil and vegetative cover. Although this can still be implemented, this would not only cause the highest impacts on biodiversity, but, according to road engineers, also involve the higher cost.

## 2) Rehabilitation of existing culverts (Alternative 1)

On the existing road from Ehden all the way to Hadath el Jibbe, seven culverts were counted. The planned by-pass road in Ehden accounts for three culverts, one of them being for herd passage. These drainage culverts have been assessed for their suitability for animal crossing, and some have been retained that will require minimum investment for their rehabilitation.

The benefits of this approach lie in 1) the limited level of investment required, that will make it more acceptable to the local populations, 2) the spatial distribution of the culverts, thus allowing animal crossing at different points of the road, 3) less impacts on biodiversity than the construction of a new culvert, and 4) their rehabilitation and long-term maintenance contributing to improved drainage. Some of these culverts are totally blocked by eroded material, rocks, disposal of wastes.

## 3) Soft actions on road characteristics and traffic (Alternative 2)

A significant number of animal kills on roads are known to occur at night. This is the time when animals are most active. Car headlights can have a detrimental effect in increasing animal kill as wild animals usually freeze when caught in the lights of a car, and remain in the middle of the road. It is suggested in this case to place light dispersing equipment at the points where highest animal passage occurs. Additional measures include the installation of warning signs indicating the possibility of animal crossing; road management in order to reduce speed, especially in open areas; awareness and education campaigns with both the local population and visitors to the area to reduce aggressive and dangerous behaviors.

### (3) Impact on Water Resources

The proposed wastewater treatment plants under this project are located in Bcharre and Hadchit, to serve these villages separately. The quality of the wastewater effluent should at all times comply with the MOE standards. The overall impact on water resources will in this case be positive, with an expected improvement of the quality of the river water as compared to the baseline conditions.

### (4) Environmental Monitoring Plan

Impact and compliance monitoring will be practiced during the operation phase of the project. The monitoring plan focuses on selected environmental indicators, the compliance with standards, and the assessment of the level of impacts on the environment. The costs for implementing the monitoring plan during the operation phase as well as the definition of indicators, frequency, and monitoring locations are outlined in Table 8.8.1.



**Table 8.8.1 Summary of Proposed Environmental Monitoring Plan**

Parameter	Location in Study Area	Samples	Frequency	Phase	Responsibility	Cost (US\$)
Wastewater Quality (pH, BOD <sub>5</sub> , TSS, fecal coliforms, nitrates, phosphates)	Outlets of treatment plants (Bcharre and Hadchit)	One sample/location	Monthly	Operation	Municipalities	US\$150/sample (US\$3600/year)
Water Quality (pH, BOD <sub>5</sub> , TSS, fecal coliforms, nitrates, phosphates)	Two samples along the Qadisha River (bridge near electric power station and fish pond in the valley)	One sample/location	Annually (dry season/September)	Construction/Operation	QCPMP	US\$150/sample (US\$300/year)

QCPM; Qadisha Cedars Planning and Management Program

Source: JICA Study Team

### 8.8.2 Social Impact

According to the IEE conducted as part of the master planning, no significant negative social impact is anticipated from the proposed project. The project is expected to contribute to solving the unemployment problem by generating job opportunities through tourism and micro industry support. The cultural heritage would be enhanced through project implementation as well. The successful implementation of the project would depend on the cooperation of municipalities on the rim. Possible cultural and political conflicts involved in the project would be insignificant as compared to those mentioned in Section 7.8, since most project components are physical in nature requiring technical judgments as well as cost considerations. Guidance of MOE, MOPW and other agencies should be sought, if and when technical judgments become necessary related to culverts, sewage design and other matters.

This program will also create an improved awareness, through its promotion efforts, of the value of the villages' built heritage, and the need for historic preservation to preserve the urban fabric.

