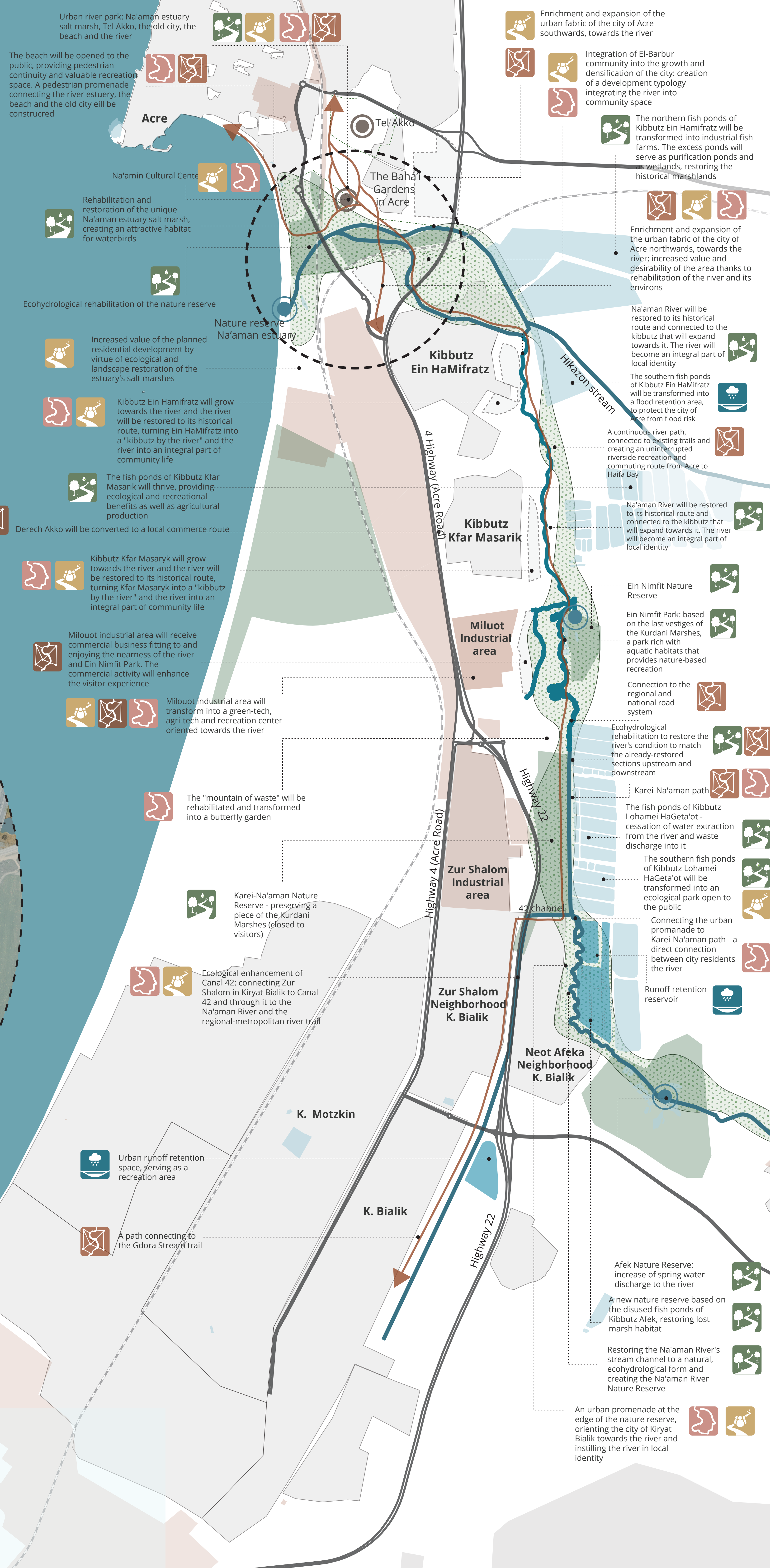


- Communities
- Planned residential development
- Industry and commerce zone
- River corridor
- Nature reserve
- Points of interest
- Basin management
- Ecohydrological function
- Human components
- Public perception of the river
- Role of the river in its environs



- Logo of the Ministry of Environmental Protection and Nature Conservation
- Logo of The Society for the Protection of Nature in Israel (SPNI)
- Logo of the Ministry of Agriculture and Rural Development
- Logo of the Ministry of Tourism
- Logo of the Israel Nature and Parks Authority
- Logo of the Ministry of Planning
- Logo of the Ministry of Health
- Logo of the Ministry of Education
- Logo of the Ministry of Defense
- Logo of the Ministry of Justice
- Logo of the Ministry of Labor
- Logo of the Ministry of Housing and Construction
- Logo of the Ministry of Transportation
- Logo of the Ministry of Energy
- Logo of the Ministry of Science and Technology
- Logo of the Ministry of Religious Affairs
- Logo of the Ministry of Social Services
- Logo of the Ministry of Welfare
- Logo of the Ministry of Regional Councils
- Logo of the Ministry of Local Government
- Logo of the Ministry of Environmental Protection and Nature Conservation



# Reviving the Na'aman: Renaissance of River, People and Sea

## The project area

### The Na'aman River: an integral piece of the history of the northern Haifa Bay.

The Na'aman River is a perennial estuarine stream, flowing for 11 kilometers at the periphery of Acre Valley: from Afek Springs northwards to its estuary, forming the boundary between the agricultural and urban fabrics and pouring into the Mediterranean Sea just south of Acre. The river's basin is a mosaic of diverse scenery, ecosystems, communities and cultures. In the past, the river and its environs were an extensive swampland (the Kurdani Marsh) whose presence shaped land use in the area. Historically, the river was closely associated with the city of Acre, a once-important port city and strategic stronghold for empires through the ages.

### The taming of the river.

Jewish settlement in the 1940s had a significant impact on the river's environs and its public image. The British mandate and the Jewish National Fund drained the marshes and prepared the land for

agriculture and for the development of kibbutz settlements - Kfar Masaryk and Ein HaMifratz - west of the river.

Drainage of the Na'aman marshes dramatically transformed the landscape and minimized the river's presence. What was once a wide and winding river flowing through marshes became a deep, straightened drainage channel, detached from its surroundings. This scenic, ecological and morphological change distanced the river from the public eye and awareness of its existence slowly faded from the consciousness of its adjacent communities - Kiryat Bialik, Kfar Masaryk, Ein HaMifratz and Acre. Residential and commercial development in the area "turned their backs" on the stream, and it was treated by the industrial factories, urban environment and intensive agriculture in its vicinity as a neglected backyard and unseen dumping ground.

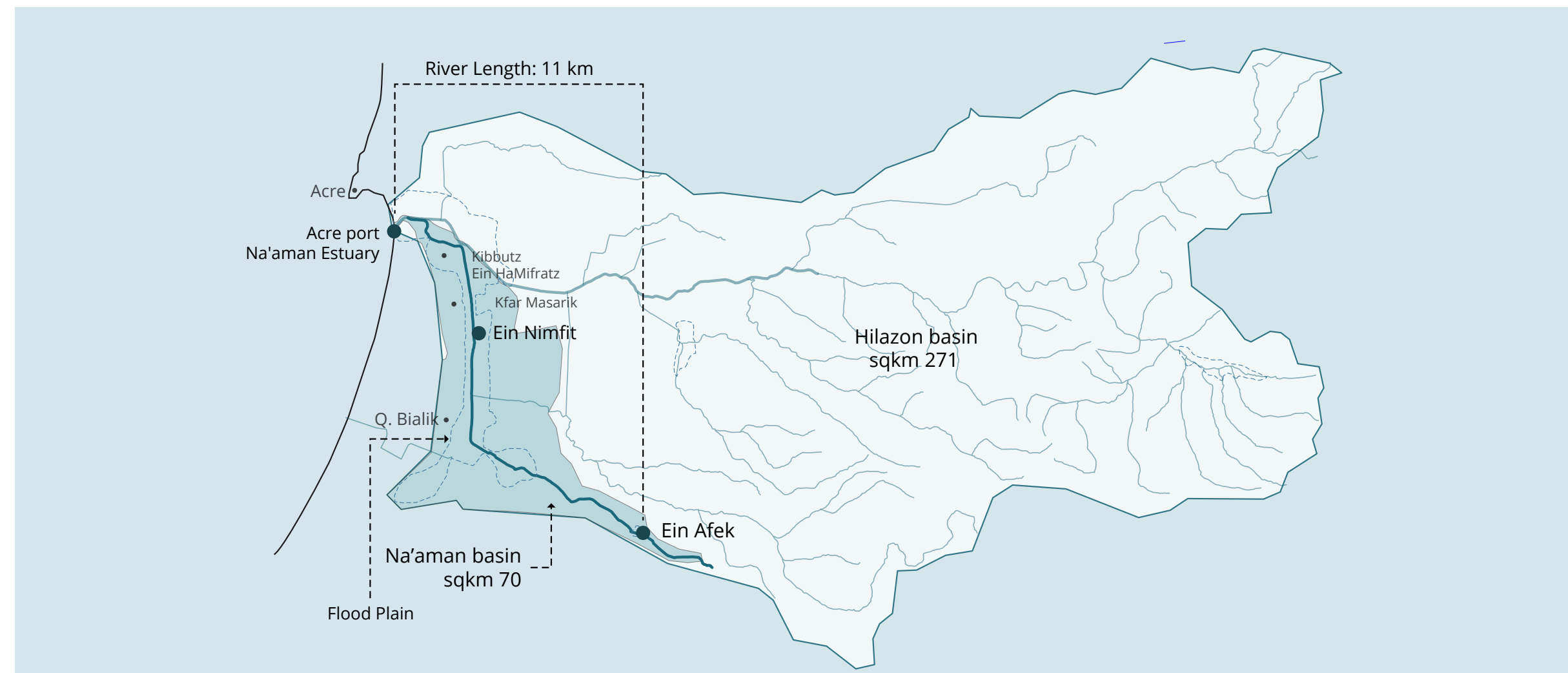
### A shift in the river's image.

Over the course of the 1990s seeds of change began to germinate. A new understanding of the

role of rivers in the landscape began to take hold in Israel, in which the river is seen as an important natural open space with environmental, ecological and recreational values. This conceptual shift led to the development of a master plan for the Na'aman River, paving the way for the first attempts to restore it to its former glory. However, the environmental restoration focused narrowly on the river channel itself, perpetuating the disconnect between the river and the adjacent human environment.

### Acre, the city by the river and the sea

The city of Acre, just north of the river's estuary, has preserved its cultural diversity and historical richness but struggled socioeconomically - the city is ranked in cluster 4 out of a possible 10 in the national socioeconomic index. Though Acre is a mixed city of Jews, Muslims and Christians, these demographic populations tend to segregate from one another and a number of projects and centers in the city are focused on remedying this segregation and building Jewish-Arab coexistence.



### Guiding principle for selection of the proposed river environs

**A classic example of the detrimental evolution** that many rivers underwent in Israel: straightening and channelization, extraction of source spring waters, sewage contamination, ecological deterioration and entrenchment of a public image of blight and decay. At the same time, the recent water plan and declaration of a nature reserve in the Na'aman attest to its potential for rebirth.

**A characteristic spectrum of challenges that arise at the interface of a river with the human environment** (urban and rural settlement; culturally distinct communities, agriculture, industry and regional and national infrastructure). The river's proximity to these intensifies its regional importance as an accessible and inviting natural space, that today remains hidden from public view and physically and conceptually isolated from the human environs that surround it.

**Geographic location along a continuous strip of urban development, intensifying the river's importance as a green lung.** Expansion and crowding of the cities and the construction of national infrastructure along the coast have eaten away at the open spaces in the Acre Valley. The Na'aman River and its environs constitute a stretch of open space crucial to the

preservation of significant, high-quality natural open space that provides a range of ecosystem services to the residents of the Acre Valley and the Haifa metropolitan area.

**A wide variety of endangered aquatic habitats.** Along the length of the perennial river's 11 kilometers are a diversity of rare aquatic habitats. Downstream from powerful natural springs and freshwater swamps are coastal salt marshes - one of the last vestiges of the salt marshes that once grew in many of Israel's coastal river estuaries.

**Significant urban development plans for southern Acre, on both sides of the Na'aman River, present an opportunity to connect the city to the river.** The river can serve as a bridge connecting between the city's districts and a meeting place for the city's diverse communities, strengthened by the connection to the old city of Acre and the sea.

**An opportunity to define a new identity for the river.** From a marginal and rejected strip within the urban industrial context, the river has the potential to be an accessible, central and beautiful place to encounter nature close to home, stitching together the patchwork of uses around it and becoming a focal point in the landscape from the dual perspectives of community life and spatial planning.



## Vision

Na'aman River will become an abundant source of life, majestic and impressive, instilling inspiration, vitality and a sense of pride in local residents and visitors alike. The river and the dynamic human and natural environment that surrounds it will coalesce into a continuous, healthy, living tissue.

Holistic rehabilitation of the river and melding of its interfaces will transform the river and its environs into an influential steward of human, economic and natural processes in the heart of the region. The river, together with the city of Acre and the sea, will become a dynamic venue and focal point in the Western Galilee region and the Haifa metropolitan area.

## Challenges and opportunities

### Function of the river within its surroundings

**The river's physical interfaces with the surrounding area create a sense of separation and remoteness.** Urban development in the river's vicinity turned their back on the river, ignoring its presence and potential.

**The city of Acre's expansion plans present a risk of severe spatial disconnect between city residents and urban functions.** Acre is set to develop as two entities separated by the Na'aman river's estuary - the existing city north of the river's mouth and a new development to its south.

**Inward-looking restoration efforts have focused on the river in isolation.** Thus far, restoration projects in the Na'aman River have addressed issues within the river corridor itself without devoting attention to its surroundings, missing the opportunity to connect the river to the adjacent human environment.

**The river is a significant green lung for the Haifa metropolitan area.** The river and its corridor are a significant green space alongside the developing and densifying urban continuum between the Haifa Bay and Acre, crowded by urban sprawl, national infrastructure and proliferating transit systems.

**The river's presence is unfelt in the urban landscape.** The river and its environs do not form an important part of the landscape but rather are hidden by the urban uses that surround it (residential, industrial, commercial and agricultural).

### The river's place in the public eye

A perceptual disconnect between the river corridor and the human environment. The river's natural landscape and scenery do not form a part of the identity of local residents and are not present in the public consciousness.

Sizable sections of the watercourse are considered to be a nuisance and a threat. The river "doesn't count" as nature-close-to-home in the eyes of residents, and is regarded as infrastructure rather than an attractive outdoor space.

### Eco-hydrological function

**Aquatic habitats and scenery are rapidly disappearing from the Na'aman landscape.** The marshlands and bodies of water in the Na'aman River corridor have traditionally provided a habitat for dozens of species of birds (mostly waterbirds) flying along Israel's western migration route. Aquaculture pools compensated to a degree for the loss of the aquatic habitats, but today the fish-breeding industry is experiencing a severe decline, putting the habitat in danger of disappearance.

**Loss of biodiversity.** A decline in both the quantity and the quality of water as well as the loss of the continuous open area the unique habitats along its length brought about a significant decrease in the river's biodiversity and even the local extinction of rare species.

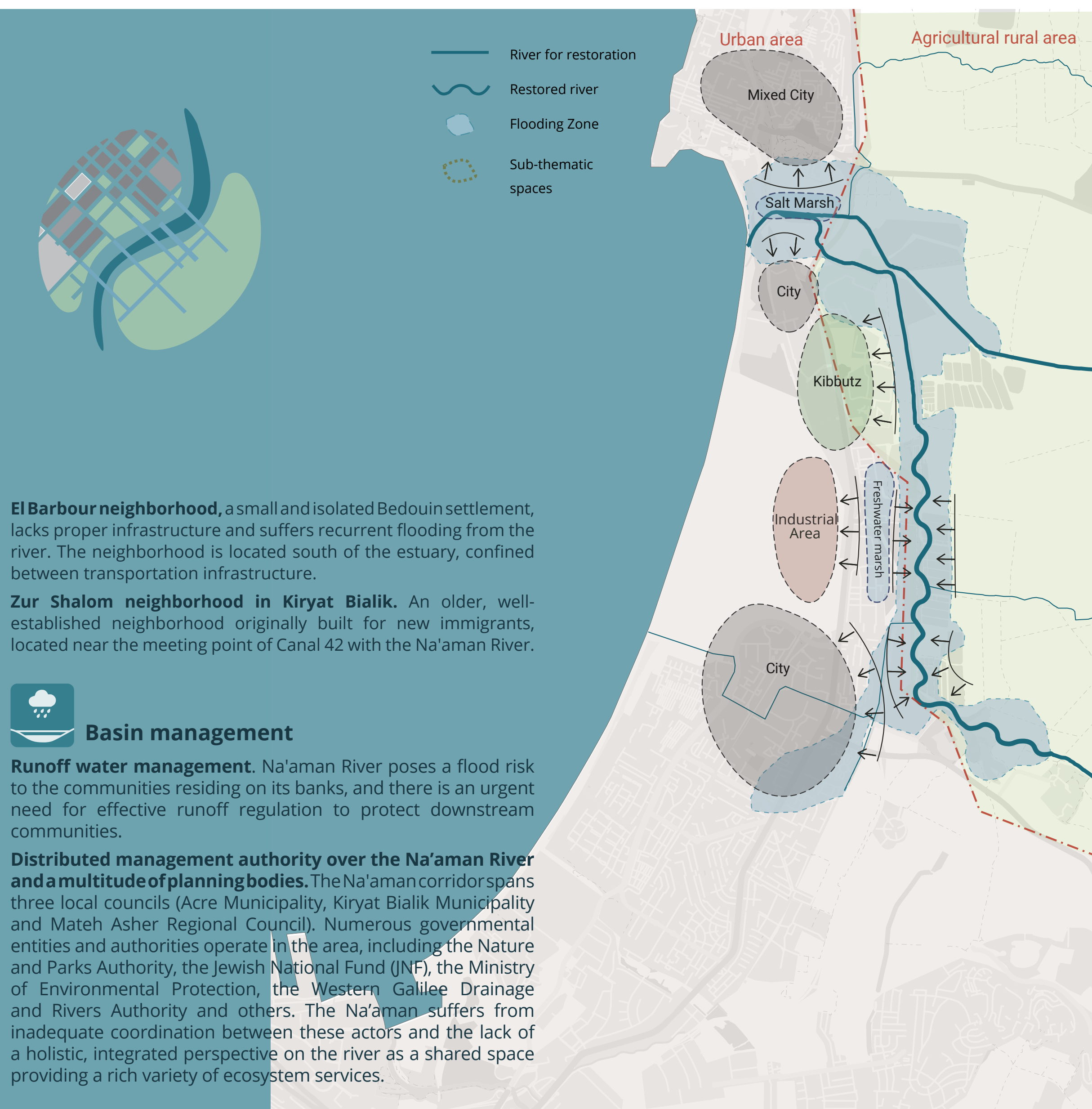
**Degraded morphological and environmental conditions.** Despite restoration efforts carried out along the river, most segments of the river still flow through a narrow drainage canal and suffer from environmental contamination. Except for the nature reserves and Ein Nimfit Park, the river has not gained substantial physical space on either of its banks, and some areas are still neglected, damaged and are not adequately accessible or attractive.

**A unique salt marsh habitat in the river-sea estuary.** The coastal salt marsh, a unique, nationally endangered habitat, has survived in the Na'aman River estuary - one of only two significant coastal salt marshes that remain in Israel. The estuary also comprises a transition area (ecotone) between two habitats, the river estuary and sea water, thus hosting a particularly rich variety of flora, waterfowl and fish.

### The human element

**A variety of communities along the Na'aman River basin.** Various types of towns and communities are situated along the river: the city of Kiryat Bialik, the mixed Arab-Jewish city of Acre and Kibbutzim in the Mateh Asher Regional Council.

**Sub-communities in Acre, divided along religious lines.** Acre is a mixed city ranked in cluster 4 out of 10 in the national socioeconomic index. Its populations are religiously traditional and the education system perpetuates their segregation.



**El Barbour neighborhood,** a small and isolated Bedouin settlement, lacks proper infrastructure and suffers recurrent flooding from the river. The neighborhood is located south of the estuary, confined between transportation infrastructure.

**Zur Shalom neighborhood in Kiryat Bialik.** An older, well-established neighborhood originally built for new immigrants, located near the meeting point of Canal 42 with the Na'aman River.

### Basin management

**Runoff water management.** Na'aman River poses a flood risk to the communities residing on its banks, and there is an urgent need for effective runoff regulation to protect downstream communities.

**Distributed management authority over the Na'aman River and a multitude of planning bodies.** The Na'aman corridor spans three local councils (Acre Municipality, Kiryat Bialik Municipality and Mateh Asher Regional Council). Numerous governmental entities and authorities operate in the area, including the Nature and Parks Authority, the Jewish National Fund (JNF), the Ministry of Environmental Protection, the Western Galilee Drainage and Rivers Authority and others. The Na'aman suffers from inadequate coordination between these actors and the lack of a holistic, integrated perspective on the river as a shared space providing a rich variety of ecosystem services.

## The Plan | Conceptual approach

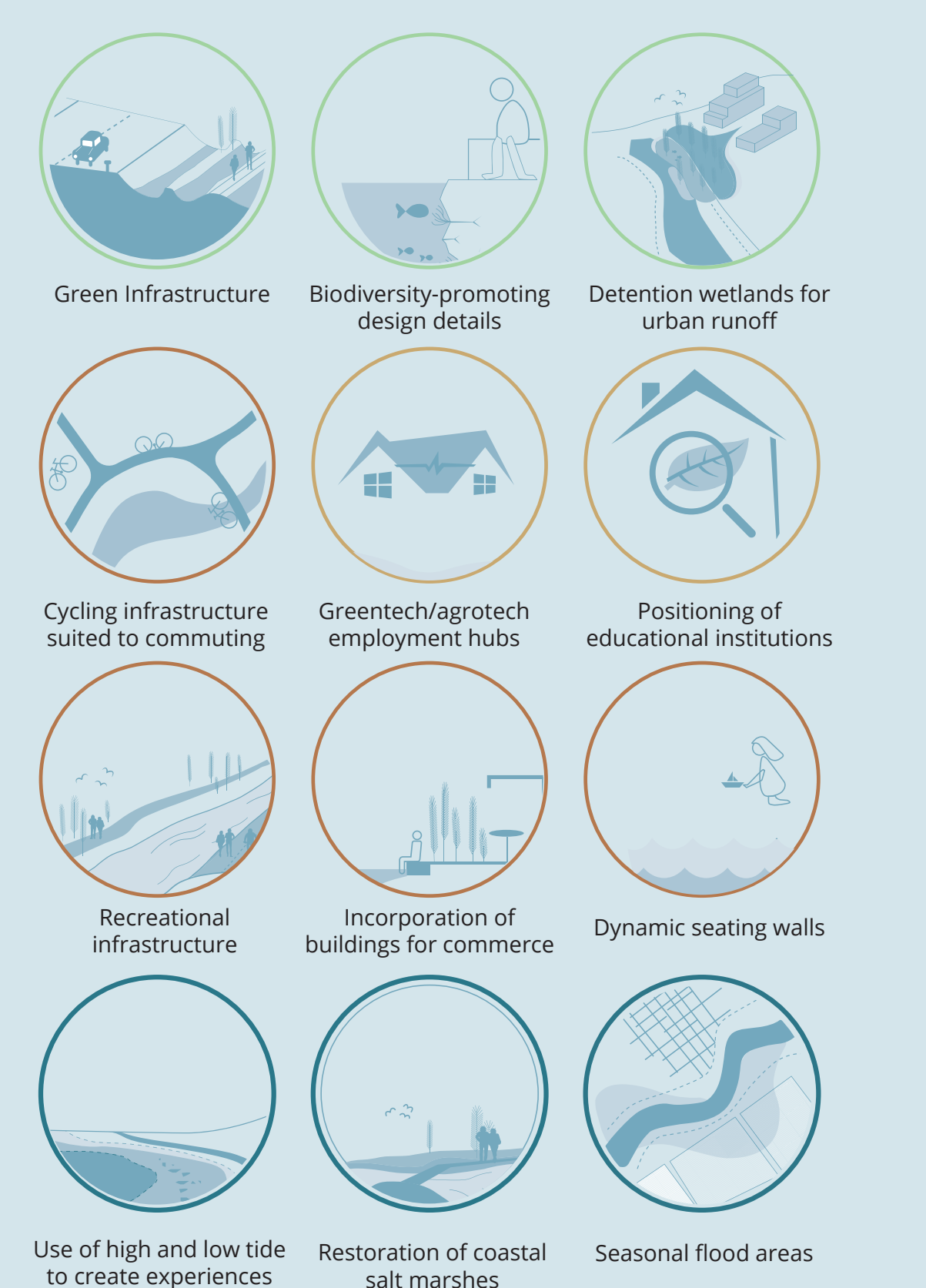
The rehabilitation of the Na'aman River will focus on the diverse communities that lie in and around the river, and in response the communities will turn towards the river and its environs. This reciprocity will be the basis for integration between the river and the human tapestry that exists alongside it.

### Program components

- Fusion of the interface between the physical human environment and the river corridor - in both urban and rural areas
- Connectivity between the built environment and the river
- Connectivity between the parts of the city of Acre on both banks of the river
- Design of the estuary's built environment with the river
- Connectivity between the river, the seashore, the historic old city and the new southern district
- A new "green" identity for the Milouot Industrial Zone, drawing sustainable businesses to enjoy the zone's proximity to the river and its park
- A social-educational program for the Na'aman River that aims to bring together the diverse river communities
- Restoring the river and salt marshes to their historical role in the landscape
- Eco-hydrological rehabilitation of the river and

- drainage canals - morphological and ecological rehabilitation of the river along its entire length, improving its continuity
- Enhancing the image and raising the value of the salt marshes: rehabilitation and restoration of the estuary salt marsh landscape
- Aquatic habitat rehabilitation and restoration by creating a gradient of intensity and public access
- Preservation of aquatic landscapes via mixed uses (aquaculture, ecology, tourism) in the fish ponds, and implementation of the water plan
- Implementation of the water plan - a significant increase in the quantity and quality of water in the river
- A regional-metropolitan green commuting and recreation route for walking and cycling
- Ein Nimfit Park - a regional recreational park
- Developing the city park as a shared recreation and meeting place for the Acre communities
- Surface runoff regulation and municipal drainage

### Toolkit



## Benefits

### Human environment

Inter-community mingling and creation of shared experiences in the city park around the river • Creation of a living interface between the residents and the river, enhancing residents' sense of identity and belonging and raising public awareness of the river • Improved quality of life for Haifa Bay and Acre Valley residents who suffer from urban crowding, thanks to the river corridor as a close-to-home and accessible green lung • Deepening of the human-nature connection • Support for the local economy by creating a continuous and beautiful backdrop to commerce and economic activity, from Kiryat Bialik to Acre's old city • An enjoyable commuting experience through natural scenery • Linking disconnected parts of Acre by means of the river - restored, inviting and a destination in its own right • Empowering the Na'aman River and the city of Acre as an integrated anchor of tourism in the western Galilee and increasing the area's prominence on the map of Israeli tourism.

### Natural space

Creating a rehabilitated river environment that preserves unique habitats for flora and fauna that have all but vanished from the local landscape • Preserving the regional presence of fish ponds as a unique habitat and landscape pattern by introducing new uses for these areas on the backdrop of the economic decline of the fishing industry • Mitigating flood risk caused by proximity to the river

## Innovation

A socio-ecological approach to managing the river and its environs:

Incorporation of different types of knowledge - professional, academic and local • A reflective, flexible and iterative process, examining findings along the way and adapting to changes in the ecological, political and social landscape • Accompanying research that examines social and ecological benefits in each project phase, to ensure optimal outcomes for society and environment.

Development that generates multiple benefits

Green routes used for commuting, not just for recreation and leisure.

A view of transit and other public infrastructure as part of the area's landscape, to be leveraged to provide multifunctional benefits.

Creation of a strategic planning and design toolkit

for coping with the diverse challenges of the land-use interfaces in the project space; can be applied to the planning process in other rivers, streams and basins.

## Sustainable management of the rehabilitated area

**Concept:** the river basin and its environs as a single entity with a holistic administrative mechanism. The administrative mechanism will take action to: restore and rehabilitate the river and advance planning processes; incorporate the river into the region's identity; treat the river as a resource and generate economic benefits from it; and ensure local residents' quality of life.

**A new entity, the Na'aman River Administration,** will serve as a directorate overseeing the local municipalities, the Western Galilee Drainage and Rivers Authority and the Nature and Parks Authority. The mayor of Acre will serve as the first chairman of the administration for the first 5 years. A general administrator will be appointed to advance the river's

rehabilitation, economic development and social activities.

**The plan will be implemented by municipally owned corporations** in each municipality. The Acre Economic Company will set up a department for the development of Na'aman River that will develop, manage and maintain the Na'aman estuary park, and coordinate social and economic activity. The department will manage, develop and maintain the park, and will include a community coordinator dedicated to managing the plan's social dimension in conjunction with organizations and nonprofit associations currently operating in the city - the Mediation Center, the Community Centers network, and the Acre Jewish-Arabic Community Association. Led by the community coordinator, the department will initiate events and activities for city residents and visitors, and promote cooperative and participatory social planning for the park that addresses the needs

of the city's diverse communities.

**The river's eco-hydrology will be jointly managed by the Western Galilee Drainage and Rivers Authority and the Nature and Parks Authority,** facilitating hydrological, morphological and ecological rehabilitation of the watercourse.

## Project Budget

