WORLD BANK **ROYAUME DU MAROC**

REHABILITATION OF THE FEZ MEDINA

PROJECT SUMMARY DOCUMENT

MAY 1998

HARVARD UNIVERSITY
GRADUATE SCHOOL OF DESIGN
UNIT FOR HOUSING AND URBANIZATION

AGENCE POUR LA
DEDENSIFICATION ET LA
REHABILITATION DE LA MEDINA DE FES

1.0 Project Overview

The Medina of Fez was designated a Heritage of Mankind city by UNESCO in 1980. It has a population of about 181,000 in two separate districts—Fez Bali (population 146,000) and Fez J'did (population 35,000). Changing lifestyles, the deterioration of the infrastructure and the transformation of traditional handicraft activities into partially mechanized small-scale manufacturing have contributed to the degradation of the urban environment. Today, the Medina, which encompasses 13,500 parcels with approximately 31,600 separate dwelling units and close to 10,000 businesses, offers a striking contrast between areas of thriving economic activity and over-densified residential quarters whose buildings are deteriorating steadily.



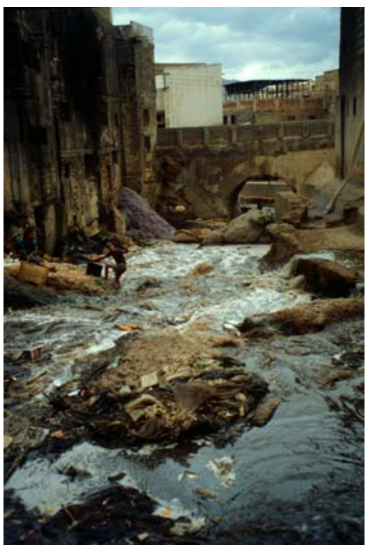
Left: Aerial view of Fez Medina. Center: Thriving commercial streets. Right: Deteriorating residential zones.

The rehabilitation strategy defined by the Project is based on an exhaustive series of field studies documenting existing conditions, the socioeconomic characteristics of the population, and the dynamics of private investments. In spite of the presence of a significant number of low-income households, the analysis revealed a willingness to invest in housing improvement on the part of both owners and tenants. The most serious impediments include complex property ownership and occupancy patterns, rent regulations, lack of accessibility, and environmental pollution. The overall rehabilitation strategy for the Fez Medina will alleviate these constraints through the following action programs and projects:

- Improvements to the existing circulation network, including the creation of parking structures on the city's periphery.
- The creation of an emergency vehicular network.
- Selected environmental improvements, including the relocation of polluting industries to an industrial area outside the Medina, the regrouping of specific traditional activities to facilitate deliveries, the creation of public spaces to relieve the density of residential neighborhoods, and improvement of the solid waste management system.
- The expansion of existing programs to improve the built environment, consisting of consolidation of dilapidated structures, demolition of ruins, construction of community facilities, and urban landscaping.

- The creation of an incentive program to encourage private investment in improvements to the built environment and engage residents in the rehabilitation process.
- The creation of thematic tourist circulation routes and the restoration of monuments.
- Poverty alleviation through the generation of employment opportunities.
- The reinforcement of existing institutions in the two municipalities and ADER-FES.

Taken together, these interventions will improve the quality of life in the Medina and reverse the sustained disinvestment in the building stock that is the main cause for its physical deterioration. They will create an estimated 10,000 jobs over 15 years, mainly in lower-skill occupations. The public investment required to launch the process is estimated at Dh 240 million; World Bank financing of US $14.0 million is sought for this. Other funding sources have been secured for the relocation of polluting industries and will be solicited for the rehabilitation of selected monuments and pilot projects.



Left: Relocation of noxious industries outside the Medina will alleviate pollution and allow restoration of the historic riverbank. Center: Mechanization of traditional industries contributes to pollution and the deterioration of the built environment. Right: Regrouping of nonpolluting industries will facilitate access for transport of supplies and products.

The planned improvements have been carefully designed to minimize alterations to the historic fabric of the Medina and to avoid population displacement. The emergency circulation network of about 14 kilometers of improved streets will allow residents to benefit from better accessibility and enhancement of the living environment. Other areas of improvement will include solid waste management, regrouping non-noxious industrial activities in small industrial complexes, landscaping public spaces at critical locations, development of tourist facilities, and strengthening of institutional capacities through technical assistance and increased funding. The impacts of the interventions are summarized in the appended matrix.

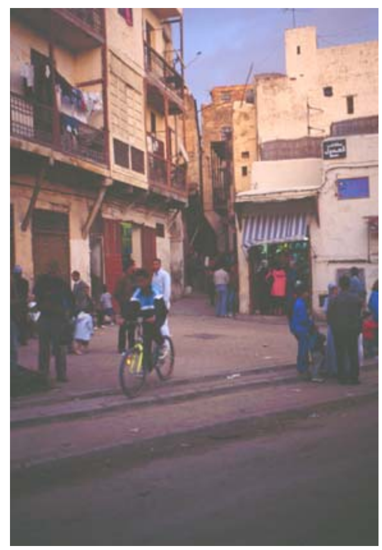
2.0 Positive Project Impacts

2.1 *Improvement of Sanitary Conditions and Safety in the Medina*

The emergency circulation network, street paving, installation of street lights, collection of solid wastes, landscaping of public spaces and provision of parking facilities will both improve the living environment and enhance property values. The relocation of heavily polluting industries outside the Medina, as well as other public works and infrastructure upgrading currently under way will reinforce these impacts.

Collapsed or structurally unsound buildings require emergency action involving both the public and private sectors. Beyond consolidation and critical repairs, the municipalities lack the technical capacities and political will to enforce building codes. Priority is given to emergency repair of structurally unsound buildings fronting on improved roads and tourist circulation routes. Demolition of ruins and site clearance will be undertaken in conjunction with other public works along the improved streets, with the costs defrayed by or recovered from the owners, as stipulated by law. It is anticipated that all infill lots fronting on improved roads will be fully developed within a 15-year time frame.





Left: The creation of an emergency circulation network will enable passage of small emergency vehicles and provide fire protection, safety, and first aid stations. Center: Residential areas where the narrowness of streets hampers service delivery will be within 100 meters of the emergency network. Right: Improvement of existing access roads and 14 kilometers of the street network will induce commercial development, renovation of dilapidated buildings, and rehabilitation of the historic fabric.

2.2 *Preservation of the Historic and Cultural Environment*

Safeguarding the Fez Medina benefits not only its residents but also the nation and the world. The unique character of the city is a source of pride to Moroccans and the tourism it generates provides a source of foreign currency revenue to the nation as well as employment and income to the local residents.

2.3 *Promotion of Private Investment*

The rehabilitation strategy capitalizes on the existing urban dynamics and provides complementary incentives aimed at mobilizing private investment. Investment in housing renovation and rehabilitation will be mostly by property owners improving their own dwellings and by small developers buying, repairing, and re-selling renovated apartments.

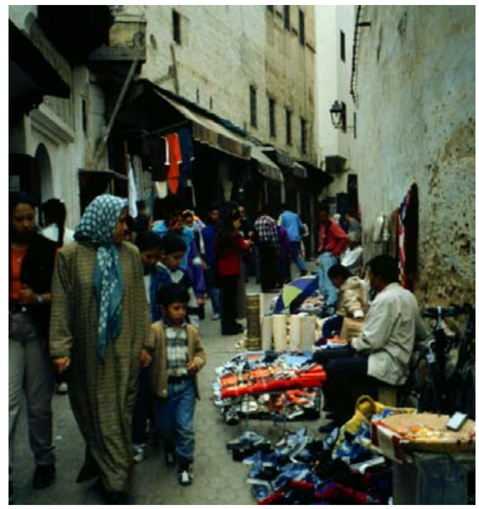
2.3.1 *Investment in Housing.* In the Medina, housing units are in relatively poor condition and are smaller in size than in the modern city, which limits rent despite high unit prices. Rents vary from a low of Dh 500 for a one-room dwelling to a high of Dh 2,100, as compared with Dh 1,150 to Dh 1,250 for affordable units in the new city, and



Left: The subdivision of family residences into separate dwelling units by the addition of stairs and mezzanines affects their structural soundness and overloads their sanitary systems. Center: Conversion of buildings into tenements results in overcrowding, substandard living conditions, dilapidation, and the loss of cultural heritage. Right: Private renovation of a dwelling includes the introduction of modern sanitary fixtures and household kitchen appliances.

Dh 1,500 to Dh 2,250 for units of a higher standard. Rent regulations are commonly circumvented by the practice of paying "key money." The sum paid ranges from five times the annual rent for a one-room dwelling to 10.4 times the annual rent for a house and 12.7 times for an entire floor. Given the high cost of real estate in the Medina, the two-room dwelling is widely viewed by first-time buyers and long-term tenants as the minimum habitable space worth investing in. It is also the dwelling size for which demand is highest in both the sales and rental market, accounting for 25% of residential property transactions from 1990 to 1996. Improvements that lead to enhanced valorization potential tend to trigger renovation activities. Repair permits increased from 700 in 1993 to over 1,000 in 1997.

2.3.2 *Investment in Micro-enterprises and Commercial Activities.* The Medina is an intensely competitive environment for small businesses and micro-enterprises. Operating margins are squeezed by the high cost of land and transport. Commercial and service activities stretch in a sequence of large *souks* along the main thoroughfares and in smaller *souks* off these main roads. A scattering of smaller groupings are embedded deeper in the urban fabric. Along the emergency road network, the majority of business owners are tenants, with a variety of tenure and operating arrangements. Monthly rents are low, tightly clustered around an average of Dh 302 (in 1997), while sales prices averaged



Left & Right: Improvement of accessibility, circulation, urban services, and public space, fosters the development of commercial activities.

Dh 87,571 for both the business and the key money for the premises. The improvement of premises is rarely undertaken, except at the starting up of a business. In spite of widespread concern with the downturn of the economy, business owners generally viewed the rehabilitation of the Medina as a positive factor. Improved access will lower the carrying charges, enhancing their competitiveness. Both property owners and business owners and/or operators would invest in renovation of commercial premises along with others in the same souk or cluster.

2.4 *Economic Performance*

The Project's economic impacts are assessed through three indicators: employment generation, the mobilization of private resources, and its contribution to the Moroccan economy, quantified by the its present value (NPV) and economic rate of return (EIRR).

2.4.1 *Employment Generation.* The employment generated by the Project over 15 years is estimated at 10,000 jobs grouped in five main categories: formal construction, informal construction, construction support services, micro-enterprises, and jobs induced by second-round expenditures on goods and services. About 50 % of the jobs are in occupations requiring lower skill levels. Less than 30% of the employment generated is included in the computation of benefits. It is assumed that jobs in the formal construction sector and related support services would employ few previously unemployed workers.

In the micro-enterprise and informal construction sector unemployment is estimated at about 30% at any point in time as workers await new jobs or seek casual labor.

2.4.2 *Leveraged Private Investment.* The bulk of the benefits generated arise from the increase in economic activity and development potential created by the project. This potential will be realized over a 15-year time span in accordance with a realistic development scenario which takes into consideration ownership and occupancy patterns as well as institutional and regulatory constraints deterring private investment. The leverage ratios achieved are depressed by the lack of publicly owned vacant land that can be auctioned off to finance the infrastructure works and the lack of effective cost-recovery mechanisms to recover the cost of infrastructure improvements. In the absence of selling land in the vehicular access zones improved by the Project, leverage ratios achieved under the realistic development scenario will rise from 0.6 in year 3, to 1.5 in year 6, to 2.1 in year 9, and will reach the 3.0 mark by year 15. Incremental development will lead to the expansion of commercial and service activities, the renovation of buildings, and the refurbishing of dwellings in the impact area.

Left: Public investment in the rehabilitation of the cultural heritage will leverage three times the amount in private investment and create a range of employment opportunities in construction, building materials, manufacturing, and transport, as well as in the retail and the service sectors. Right: Incentives to encourage private rehabilitation of buildings will help conserve the historic urban fabric.

2.4.3 *Economic Returns.* The increase in property values attributable to the Project is used as the proxy to measure benefits, since it captures the current and prospective economic value of the development potential created by the Project. The incremental value attributed to the Project is computed as the difference between the projected value of land in the impact zone and the value of land outside the impact area plus the value of the improvements to property.

An exhaustive processing of real estate transactions in the Medina over the 1990-1996 period supplemented by interviews with real estate brokers provided sorely lacking data on the evolution of property values as well as information on current conditions in the rental and sale market. Overall, real values increase at an annual rate of about 3%. As in most historic centers existing buildings are valued below their real building costs. They increase in value marginally in real terms, mainly in conjunction with improved maintenance. However, renovations are valued at higher than real building costs and increase in value at about 1% in real terms annually. In the economic assessment, property is valued at market rates as reported in the 2,300 notarized sale documents, deposited at the registry, without correcting for under-reporting.

Table 1 - Fez Rehabilitation Economic Assessment, Year 15

ECONOMIC RETURN	
❑ NPV (million Dh)	155
❑ EIRR	13.62%
GROSS EMPLOYMENT	
❑ Direct	
• Public Works	1,500
• Building Construction	
▪ Private Developers/Contractors	3,600
▪ Informal Builders	
❑ Indirect	
• Micro-enterprises	3,100
• Construction related	740
❑ Induced	1,090
LEVERAGE	
❑ Public Investment (million Dh)	170
❑ Private Investment (million Dh)	520
❑ Ratio	3.06
Floor Area Developed (m^2)	200,000

The NPV and EIRR reflect the anticipated pattern of slow but steady flow of benefits arising from the scheduled implementation of public works and the time frame required for induced private investment in housing and micro-enterprises to reach its full potential. This is attributable to:

- The multiplicity of actors and legal procedures involved.
- The legal difficulties created by the complex tenure and occupancy patterns.
- The technical difficulties entailed by partial demolition, consolidation and rebuilding of affected spaces, structural shells and facades.
- Widespread joint ownership, numerous co-owners, private habous as well as overcrowded tenements, legal caps on rent increases, and tenant protection laws all of which impede rehabilitation and redevelopment potential. Property owners must first buy out co-owners, tenants or other holders of primary and secondary rights before embarking on valorization of their real estate assets.

Improved access typically leads to a one-time jump in price followed by a progressive increase at a rate higher than in unimproved areas because of the sustained demand for accessible sites. The selected development scenario assumes a price increase of Dh 1,000 per square meter over an average base value of Dh 1,000 per square meter along the alignment of the emergency network, and an annual rate of increase in values of 5.15% compared to the current base rate of 3%, yielding an EIRR of 13.62%. The sensitivity analysis tested the Project's economic performance under price increase factors ranging from 1.75% to 2.25% and annual rates of increase in value ranging from 5.0% to 5.5%.

Table 2 – Economic Assessment, Annual Flow of Benefits
Realistic Development Scenario*

	Base Cost		Cost Increase of 10%		Cost Increase of 20%	
Year	**NPV (Dh000)**	**EIRR (%)**	**NPV (Dh000)**	**EIRR (%)**	**NPV (Dh000)**	**EIRR (%)**
Year 6	-12,550	4.9				
Year 8	31,182	18.4	9,402	12.3	-12,379	7.2
Year 10	66,105	23.8	45,166	18.3	22,227	13.8
Year 15	155,052	28.8	132,683	24.3	110,314	20.7

* Value of land made accessible rises to 2000 Dh/m^2 and grows at an annual rate of 5.25%.

Under all plausible development scenarios studied, benefits increase rapidly from year 4 onwards – albeit at a significantly slower rate after year 10 and tapering off by year 15, yielding an EIRR on the order of 12% to 15%. Benefits arising from increased revenues from tourism and the intrinsic value of conserving the cultural heritage of mankind are not included in this analysis. A separate contingent valuation study has been undertaken to arrive at a preliminary quantification of this intrinsic value.

2.5 *Strengthening Institutional Capacities*

Strengthening the managerial capacities of the municipalities of Fez Medina and Mez Mechouar and of ADER-FES will have long-term as well as Project-related benefits, particularly in organizing and managing public/private partnerships in the rehabilitation efforts.

3.0 Negative Project Impacts and Mitigation Measures

Alternative alignments for the improved circulation system were studied with great care in the field by ADER-FES to avoid disruption of the historic fabric and minimize negative impacts on residents and existing economic activities.

3.1 *Disturbance of the Historic Fabric*

Despite the narrowness of alleyways, demolition has been reduced by selecting design standards that allow a width of only 1.70 meters where necessary. Modifications to buildings impeding the passage of small vehicles along the emergency network are limited to minor adjustments of corners and entryways to eliminate steps jutting into the street.

Improvements to accessibility are introduced without compromising the integrity of the historic fabric.

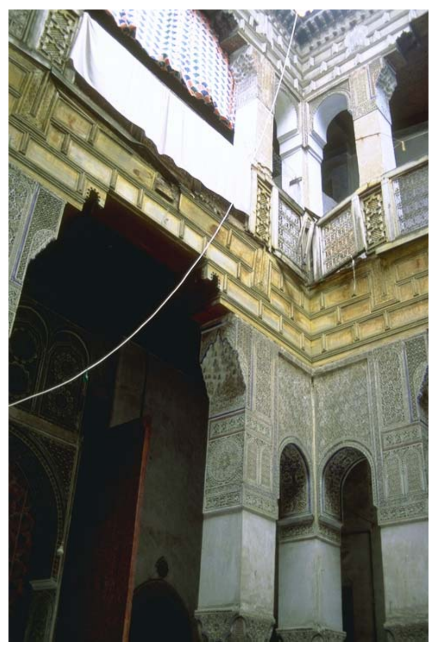
3.2 *Displacement and Relocation*

There is no permanent displacement occasioned by the Project since no inhabited structure will be demolished. No temporary relocation of activities or families is envisaged since all demolitions will be minimal. In cases where an existing wall must be partly demolished, the replacement wall will be constructed prior to demolition. Eight commercial premises, four of which are vacant, will be demolished. The four occupied premises house heavily polluting industries that are included among those being relocated to the new industrial zone at Ain Nokbi, where a treatment plant for noxious wastes is under construction.

The proposed emergency street network follows existing street alignment and does not disrupt the layout of the historic circulation network.

3.3 *Modification to Buildings of Significant Cultural Value*

As a Heritage of Mankind city, Fez is comprised almost entirely of buildings of historic cultural value, with the exception of recently built or badly renovated houses. The emergency network necessitates minor adjustments to 33 buildings. Of these, only three are judged to be of "significant" cultural value, and nine of "medium" cultural value. A commission bringing together representatives of the municipality, ADER-FES, the Ministry of Cultural Affairs and UNESCO will review the work to be undertaken on these buildings.



The anticipated minor modifications will not alter the main features of the affected buildings and will contribute to inducing the rehabilitation of the built environment along the emergency road network

3.4 *Mitigation of Negative Impacts on Residents*

The persons affected by the project fall into two categories: property owners who may or may not reside in the affected properties; and occupants of existing dwelling units and commercial premises in the affected properties.

3.4.1 *Compensation of Property Owners.* Centuries of customary transfers of property rights through customary notarized transactions have resulted in fragmented ownership patterns with numerous co-owners of primary and subsidiary rights, most of whom do not dwell in the Medina. Owners of property rights affected by demolition or modification will be compensated according to national laws and regulations governing expropriation by eminent domain in the public interest.

3.4.2 *Measures to Mitigate Temporary Disruption during Implementation of Public Works.* Five temporary relocation rental units have been set aside should any of the affected households opt for temporary relocation while modification works are undertaken on the 33 buildings affected by the emergency network. In order to minimize disruption of economic activity in the Medina, public works affecting commercial activities and the parts of the streets on which they front are undertaken during night time. Work on the emergency network will affect 24 businesses.

3.4.3 *Contingency Measures.* Local authorities have committed serviced lots and apartments for unexpected relocation of up to 29 households in the unlikely event of a building experiencing structural instability during implementation of project works. Letters of commitment have been signed by the Wali of Fez and the Governor of Fez-Medina making available two options:

- A serviced plot in a public project at Sahrij Gnawa. A relocation payment equivalent to six months' rent is available while the household builds a dwelling on the serviced site.
- An apartment in a government-built affordable housing project currently under construction in Zouagha-Oued Fes.

These provisions are generous, and the commitment covers contingencies by a safe margin.

Consolidation of structurally unsound buildings under the municipal emergency repair program is undertaken primarily by ADER-FES in rather difficult field conditions.

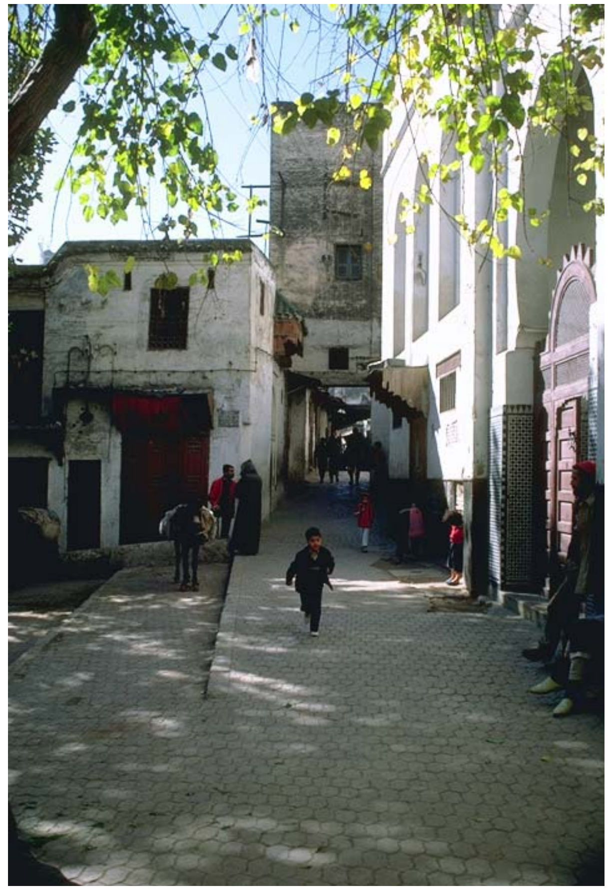
The social units within ADER-FES and the Prefecture will work in close cooperation with the municipalities of Fez-Medina and Méchouar to keep the concerned households informed of project implementation as it progresses. In the few cases where structural work is conducted on walls, households on ground floor units fronting on the street will be given the option of moving temporarily into one of five apartments set aside for this purpose while construction is ongoing or receiving monetary compensation equivalent to six-months rent should they prefer to move temporarily with relatives or friends.

3.5 Community Development

There are currently 16 ad hoc community groups active in the Medina, only nine of which have a quasi-official status. Their effectiveness has been limited by a chronic lack of resources. A Royal Letter of September 1996 called upon urban residents to take a more active role in ensuring the cleanliness of their environment. As a result, four new associations were formed in Fez in 1996 and another two in 1997. The interest shown by the population in various rehabilitation activities, particularly in the demolition of abandoned buildings and ruins, indicate that involving popular associations in specific components of the Project will be possible.

3.6 *Monitoring and Evaluation*

As part of its urban observatory and laboratory, ADER-FES will follow up on the valorization of properties in the project's impact zone. This monitoring will provide a dynamic view of the qualitative and quantitative parameters that define improvement of living standards.



Improvement and maintenance of public spaces provides the best catalyst for engaging residents in the revitalization effort at the community level.

4.0 Impact on Municipal Revenue

The growth in economic activities and property values resulting from private investment induced by the Project will result in increased municipal revenues. However, tax receipts will be sluggish in their responses to such changes because of the inherent nature of the property tax, the complexity of tenure and occupancy patterns, as well as administrative and other problems impeding collections. From FY 93 to FY 97/98, central transfers allocated to local governments based on population size and geographic balance and social equity have accounted for about 60% of the operating budget of Fez Medina. With operating expenditures running in excess of recurrent revenue, the municipality is running a perennial deficit of about 15% of the operating budget covered by the local share of the VAT. The inadequate performance of redistributed taxes denies the municipality the ability to recover directly a reasonable portion of public investment expenditures on revitalization, undermining unnecessarily its capacity to finance projects out of local revenue.

4.1 *Commercial Taxes*

Commercial licenses are a buoyant source of revenue redistributed at the *wilaya* level in accordance with population size. At present, based on the 1994 census, the Medina's share is 34% of the redistributed portion (90%) of total collections. The burden of the tax on economically active residents and business owners varies widely, reflecting the diversity of activities and occupations found in the Medina. *Patente* payments range from Dh 100 to Dh 3,000 but usually fall within the Dh 600 to Dh 1,500 range. Over the 15-year time span, revenues from commercial licenses will rise from MDh 0.3 to MDh 5.9, paralleling the growth of economic activities induced by the rehabilitation efforts. The NPV of the revenue flow is MDh 17.5. Under the current allocation formula, the Medina's share would be 30.6% of total collections. In FY 96/97 collections amounted to 58% of tax bills issued. Unless this performance is substantially improved, the Medina will receive only 17.7% of the potential revenue generated through public and private investment in rehabilitation.

Table 3 – Potential Tax from Private Investment in Commercial Activities[1]

	Average Tax Paid per Establishment 1997 (Dh 000/Year)	NPV At 10% (Dh 000)	Tax Revenue (Dh 000)			
			Year 0	**Year 5**	**Year 10**	**Year 15**
Cumulative Number of Premises Affected[2]			107	638	1,428	2,040
Potential Tax						
Commercial License Revenues	1,250	7,591	134	797	1,785	2,550
Income Taxes	225	1,366	24	143	321	459
Urban Taxes	58	352	6	37	83	118
Professional Taxes	1,313	7,973	141	837	1,875	2,679
Total Taxes[3]	2,889	17,543	310	1,842	4,125	5,894

1 Based on the development scenario considered the most realistic and used in the *Environmental Assessment* (June 1997).
2 Survey of selected establishments along the emergency network.
3 Includes taxes other than those listed above.

4.2 *Property Taxes*

Tax rolls, which are kept by the regional branch of the Ministry of Finance Tax Department, are updated by applying an annual growth factor, currently 2%, to the entire tax base. Only substantially improved properties are reappraised. Current legislative and administrative practices are leading to a widening gap between the real and appraised values of the property tax base. The Appraisal Commission is covering an ever decreasing portion of the renovations taking place, as it reappraises less than 25% of properties undergoing renovation with a permit, let alone the renovations undertaken without a permit.

Table 4 – Potential Local Tax Revenue from Private Investments in Rehabilitation and Valorization of Property (Edilitè) -- Dh 1,000

	Year 0	Year 5	Year 10	Year 15
Expected Inflation Index[1]	100	122	148	180
Stock Value of Land[2]	26,830	351,781	1,195,319	2,921,088
Stock Value of Buildings[2]	16,398	164,101	518,378	1,479,546
Investment in Equipement[2]	2,835	19,340	52,439	90,892
Rental Value of Land[3]	805	10,553	35,860	87,633
Rental Value of Buildings[3]	656	6,564	20,735	59,182
Rental Value of Equipment[3]	113	774	2,098	3,636
Total Rental Valuation	1,574	17,891	58,692	150,450
Local Property Tax	157	1,789	5,869	15,045
NPV at 10%	25,281			

[1] World Bank Report No. 14155-MOR, *Kingdom of Morocco Country Economic Memorandum: Towards Higher Growth and Employment*, September 15, 1995.

[2] Based on the development scenario considered the most realistic and used in the *Environmental Assessment* (June 1997).

[3] Computed in accordance with the Urban Tax Law:
3% of Land Value
4% of Building Value
4% of Equipment Value

The distortions introduced by *habous*, usufruct, long-term leasehold, inheritance laws and co-ownership patterns, as well as rent and tenancy regulations permeate the entire real estate market. They depress the tax base through appraisal practices relying on comparative sales and capitalization of rents and income as a valuation methods and widen the disparity between reported rental valuations and real market values reflected in sublets, key money, and buy-back of occupancy rights. For commercial property, the gap between appraised and market value can reach a factor of 15. The increase in property values attributable to the Project represents the estimated growth of the tax base as a result of the Project.

Because it is part of the urban community, the Fez Municipality's share in the local property tax is 45% of the redistributed portion (90%) of the total collections. Over the 15-year time span, revenues from the local property tax will rise from MDh 0.2 to MDh 15.0 paralleling the expanding valorization of affected properties. The NPV of the revenue flow is MDh 25.3. Under the current allocation formula, the Medina's share would be 40.5% of total collections. In FY 96/97 collections amounted to 16.3% of tax bills issued. Unless this dismal performance is substantially improved, the Medina will receive only 6.6% of the potential revenue generated.

5.0 Impact on Affordability of Renovation Activity

The Medina houses a range of socio-economic groups. Each of its 19 neighborhoods includes a mix of people with different levels of income. Moreover, no neighborhood is devoid of upper-income households, an important factor in valorizing property affected by improvements. Expenditures on housing rehabilitation and renovation are primarily made by property owners and are financed primarily from personal savings. Supplementary sources are derived from family members; only 20% to 35% of the cost is covered by borrowing, usually short-term loans from contractors and suppliers. The availability of renovations grants as part of the Project as well as the anticipated access to micro-credit is expected to increase the volume of renovation activity and accelerate the pace of valorization.

The 31,558 households living in the Medina can be classified according to their incomes into five groups, roughly corresponding to population quintiles. Among the top 41% of households, about half own their dwellings, the majority of them in *melk* status. Nearly 60% are self-employed or partially own their business. Another 25% are salaried employees covered by the Social Security Administration.

Structural repairs and interior renovation transform a deteriorated tenement into a safe, pleasant, and desirable house.

The lowest 37% of households comprises those that can be classified as either below the absolute poverty threshold or "working poor." Roughly a third of the heads of households are engaged in a range of commercial and service activities, including handicrafts. Only 13% are covered by Social Security and about 10% are casual workers. About 30% of these households own their dwellings; most live in multi-family structures where overcrowding is prevalent, ranging from 2.5 to 4.3 persons per room. The rent-to-income ratio ranges from 24.1% to 29.5%.

Whether financed through accumulated savings, additional income, or borrowing, renovation will affect sitting tenants. The dynamics of the real estate market anticipated in the development scenario will induce owners to valorize their property. Eviction of a tenant is typically accompanied by a significant compensatory payment equivalent to the buy-back of the leasehold. Information gathered on recent leasehold buy-backs ranged from Dh 5,000 (for three-year occupancy of dwellings with monthly rents ranging between Dh 800 and Dh 1,000) to Dh 20,000 (for Dh 1,300 rental units occupied for 20 years). Should an appropriate mechanism be found to induce tenants and owners jointly to undertake repairs, the impact will affect differently the three related variables: property values, key money, and rents.

Table 5 – Ability to Pay for Housing by Annual Household Income and Size

Income Group	Household Size 1	2	3	4	5	6	7	8 +
Under 7800	3.6	2.5	1.2	0.8	0.8	0.5	0.3	0.4
7801 to16000	1.8	1.8	2.2	1.4	1.4	1.0	0.6	0.9
16001 to 25000	0.9	1.6	1.7	1.7	1.2	1.1	1.1	1.9
25001 to 33000	0.7	1.2	1.5	1.3	1.6	1.2	1.2	2.1
33001 to 41000	0.3	0.6	1.1	1.5	1.4	1.1	1.0	2.4
41001 to 49000	0.4	0.8	1.2	1.2	1.5	1.4	1.4	3.0
49001 to 62000	0.4	0.6	0.6	1.2	1.5	1.0	0.9	3.4
62001to 73000	0.1	0.4	0.5	0.7	0.8	0.9	1.0	2.2
73001 to 86000	0.1	0.2	0.3	0.6	0.8	0.7	0.8	2.5
86001 to 102000	0.0	0.3	0.2	0.5	0.5	0.5	0.4	1.4
102001 to 118560	0.4	0.6	0.7	0.9	1.3	1.1	1.0	4.1

The capacity to afford the typical renovation packages without subsidies other than those inherent in the regulated market varies according to income and size of household. About half of the Medina's households below the 80th percentile are tenants. Of these, 55% cannot afford a two-room unit, 19% can afford a two-room unit without renovations, 8% can afford a two-room unit with light renovations and amenities, 4% can afford non-structural repairs and finishings, 3% can afford a completely renovated unit, and 11% can afford a completely renovated unit with structural repairs. The shape of the affordability curve, which is rather flat in its middle sections, parallels the pattern of total expenditures reported in the household budget surveys of 1984-85 and 1990-91.

Households below the 88th percentile do not have the ability to absorb the cost of major structural repairs. By providing partial front-end support to property owners, the renovation grants provided for under the Fez Rehabilitation Project will stimulate housing improvement and help minimize a displacement of poorer tenants engendered by the dynamics of the real estate market.

6.0 Valuing the Benefits of Conservation of the Fez Medina

The intrinsic value of conserving the Medina as a cultural heritage of mankind was quantified through a contingent valuation method targeted on tourists and foreign residents. About 1.5 million tourists visit Morocco annually. Tourism represents a significant source of potential income which could help finance rehabilitation, but is at present only partially captured. Foreigners who have not visited Fez or Morocco may still place an existence and preservation value on the Medina. The global value of the existence of the Medina to non-Moroccan consists of three components: direct benefits to tourists visiting Fez; passive use (existence and preservation values) to foreign tourists visiting Morocco but not Fez; and general preferences for public goods.

6.1 *Contingent valuation of visitor's willingness to pay*

A survey of 600 adult visitors was designed to represent visitors including both tourists and those visiting for business or other purposes. Use and non-use values of public goods are quantified in terms of willingness to pay for specified improvements. Respondents were presented with information about the condition of the Medina today and were told rehabilitation would accomplish three things: improve the Medina's appearance by repairing and cleaning up buildings, streets, infrastructure, public spaces, and monuments; preserve the Medina's traditional character and cultural heritage for future generations; and ensure that the Medina would continue to be a productive and vibrant living city.

To help pay for the proposed rehabilitation activities visitors would be charged a special fee when they registered at their hotel. For non-visitors to Fez, the fee was presented as a departure fee. The range of price point sub samples bracketed the anticipated median willingness to pay.

Visitors to Fez were found to be willing to pay as much as US$70 each for improvements aimed at preserving and improving conditions in the Medina. Given the number of visitors each year, this is equivalent to an annual total of about US$11 million. Other visitors to Morocco share an overall appreciation for the Fez Medina and their willingness to pay for preservation is based on the value they place on its existence, and to some extent as an option value of a future visit. These visitors were found to be willing to pay about US$30 each, resulting in a total annual benefit of about US$47 million.

Table 6 – Conservative Estimates of Valuation

Value for foreign visitors:	$11,233,148
Value for non-Fez foreign visitors:	$46,879,945
Value for Europeans:	$310,335,300

6.2 *Estimates of Benefits received by non-visitors*

A Delphi survey was conducted among European contingent valuation experts to determine the mean and median willingness to pay for the rehabilitation of the Fez Medina among the European population through a sample survey of 30 attendees at the June 1997 meeting of the European Association of Environmental and Resource Economists (EAERE) in Tilburg, Netherlands. The values elicited ranged from a mean of US$12.1 to a median of US$2.15, giving an estimate for the total intrinsic value of conserving the Fez Medina to European households of about US$310 million. The best use of this number is to indicate that Europeans place a relatively high value on preservation of the cultural heritage of mankind. Even if only a fraction of the amount of benefits received by visitors could be captured it would generate a substantial annual flow of funds to finance the rehabilitation of the Medina.

7.0 Urgency of Action

Between January 1996 and October 1997, ADER-FES undertook 64 emergency actions in the Medina. Of these, 30 involved the consolidation of structurally unsound buildings and 34 the demolition of partially collapsed structures and the removal of the debris. These interventions underscore the urgency of launching a major revitalization effort to reverse the cycle of disinvestment and dilapidation, and prevent the loss of a valuable cultural heritage of mankind. Public funds are needed in particular to launch and support renovation penetrating deep within the historic fabric; these funds will likely emanate from central rather than local government sources. The potential impact of the Fez Rehabilitation Project on economic activity, property values, and valorization is clearly very significant. If adequately captured, it can cover the debt service on loans to finance rehabilitation of the cultural heritage and return a rate of over 13% on public investment.

References

ADER-FES, Geographic Information Systems.

------------------, "Etude des accès, circulation et stationnements de la Médina de Fès. Rapport final provisoire." Klaesi, Emanuel, Fès, Maroc: 1996.

------------------, "Projet de réhabilitation de la Médina de Fès. Mobilisation des ressources locales." Tagournet, Bernard, Fès, Maroc: 1996.

------------------, "Valorisation du Patrimoine de Fès. - Rapport Final." Couillaud, Michel, Fès, Maroc: 1997.

Direction de la Statistique "Indice du coût de la vie: Milieu urbain." Secrétariat d'état à la population, Royaume du Maroc, 1997.

------------------, "Niveaux de vie des ménages, 1990/91." Royaume du Maroc, 1992.

Groupe Huit, "Projet de Réhabilitation de la Médina de Fès. Etude des accès, des circulations et des stationnements, et de la collecte des déchets solides. Rapport Final." Paris: 1996.

Groupe Huit, et al, "Sauvegarde de la Ville de FES." Programme des Nations Unies pour le Développement et Royaume du Maroc, Ministère de l'Intérieur, 1992.

Harvard University Graduate School of Design, Unit for Housing and Urbanization, in collaboration with Agence pour la Dédensification et la Réhabilitation de la Médina de Fès (ADER- Fès), *Projet de Réhabilitation de la Ville Historique de Fès*, "Rapport Technique No. 1. Caractéristiques Socio-Economiques de la Médina." Cambridge, MA, USA: 1996.

---------------------, *Projet de Réhabilitation de la Ville Historique de Fès*, "Rapport Technique No. 2. Examen du Contexte Institutionnel." Cambridge, MA, USA: 1996.

---------------------, *Projet de Réhabilitation de la Ville Historique de Fès*, "Rapport Technique No. 3. Examen du Contexte Juridique et Réglementaire." Cambridge, MA, USA: 1996.

---------------------, *Projet de Réhabilitation de la Ville Historique de Fès*, Rapport Technique No. 4. Enquête Rénovation." Cambridge, MA, USA: 1996.

---------------------, *Projet de Réhabilitation de la Ville Historique de Fès*, "Rapport Technique No. 5. Enquête Foncière." Cambridge, MA, USA: 1997.

---------------------, *Projet de Réhabilitation de la Ville Historique de Fès*, "Dynamique foncière et réhabilitation de l'habitat." Cambridge, MA, USA: 1997.

---------------------, *Projet de Réhabilitation de la Ville Historique de Fès,* "Environmental Assessment." Cambridge, MA, USA: 1997.

---------------------, *Projet de Réhabilitation de la Ville Historique de Fès,* "Impact on Municipal Finance and Affordability." Cambridge, MA, USA: 1997.

Harvard University Graduate School of Design, Unit for Housing and Urbanization, "Contingent Valuation of the Benefits of Conserving the Fez Medina, Quantification of Non-Moroccan's Willingness to Pay." Carson, R.T., R.C. Mitchell, M.B. Conaway, and S. Navrud. Cambridge, MA, USA: 1997.

---------------------, "*Project Economic Assessment Model*" Sherif Lotfi, 1995.

---------------------, *Projet de Réhabilitation de la Ville Historique de Fès,* "Examen du contexte institutionnel." Cambridge, MA,USA: 1995.

---------------------, *Projet de Réhabilitation de la Ville Historique de Fès*, "Profil des revenus et de la pauvreté dans la médina de Fès." Cambridge, MA,USA, 1996.

Navez, F., N. Lahbil, and A. Fejjal, "Evaluation sociale. Projet de Sauvegarde de la Medina de Fès. Rapport de Synthèse." Banque Mondiale et Préfecture de Fès Medina, 1995.

Scandiaconsult International AB, "Sauvegarde de la Médina de Fès. Etude de restructuration de l'artisanat de la Médina de Fès et de protection de son environnement. Version finale." Stockholm: 1996.