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URBAN AND ENVIRONMENTAL SERVICES PROJECT
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**METHODS OF URBAN PROJECT ASSESSMENT &
PLANNING PROJECT ASSESSMENT WORKSHOPS**

SYNTHESIS OF THE PROJECT ASSESSMENT WORKSHOP

Prepared For

**United States Agency for
International Development**
Rabat, Morocco

The Office of Environment and Urban Programs

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1 The Assigned Objectives

ANHI and FEC are engaged in improving the environmental aspect of their projects within the framework of the HG004 program through the use of a new approach to studies and plans. This effort has been expressed by the establishment of environmental action plans, the application of the recommendations of the 1993 Programmatic Environmental Assessment (PEA) and by a willingness to apply both technical means and personnel to achievement of the environmental objectives. In particular, the two institutions have adopted the principle of carrying out preliminary evaluations of the general character of their projects and developing new approaches in environmental assessment and the planning of interventions. However, an assessment of the effectiveness of these approaches, conducted during a previous mission in late 1996, recommended a follow-on training program development for ANHI and FEC staff.

The current mission initiated the follow-on program with the preparation, organization and conduct of a pilot workshop aimed at technical training in the environmental management of projects for the target audience: FEC, ANHI and partner organizations involved directly or indirectly with environmental protection projects. The mission was conducted as part of Functional Activity B.61, Methods of Urban Project Assessment and Planning. The activity aimed to assist with incorporation of environmental considerations in the decision-making process to contribute to an improved environmental regulatory, legal and policy framework. Intermediate Result 2.1 within the USAID Mission's Results Framework.

The intended output was training of personnel within the organizations to deal with environmental problems in the management of projects. These personnel should be able to master the planning and evaluation tools and introduce them into daily practice. They should therefore constitute a reservoir of know-how and qualified technicians who can transmit their knowledge and sensitize municipalities and other project partners.

The one-day practical workshop was also an opportunity for the individuals who had been through the three-day training of trainers sessions to gain some experience in facilitating group work. The objective was to help the group to pass on their understanding and skills to other staff and facilitate future workshops.

The principal objective of the activity was the preparation, organization and conduct of a pilot workshop to provide training in the environmental planning and management of projects, targeted at the group of partners affected in some way by urban development and improvement projects and environmental protection.

2 Selection of Participants

Criteria In light of acquaintances made during the first mission and the observations of the partners, the consultants proposed a list of names from the two institutions whom they felt could capitalize on the training experience and a list of other partner organizations capable of responding to the objectives of the workshop.

3 Components of the Activity

Advance Preparations These preparations including the collection of materials, the choice of participants and case studies, and the information provided in advance to participants are described in the accompanying Manual.

The Participants

The thirty-five participants were technicians from ANHI, FEC, the Ministry of the Environment, the Ministry of the Interior, and several municipalities, including Fes, Setrou, and Tetouan, among others. Unfortunately, private architects and engineers were not well represented. However, the mix of agencies provided an auspicious basis for future collaborative planning efforts and information exchanges. Most importantly for coordination of USAID activities aimed at achievement of its environmental quality results package, the morning session was attended by representatives of the USAID Water Resources Sustainability Project.

Welcome and Orientation Opening remarks by representatives of USAID and TSS put the workshop into the broad context of the continuing and growing worldwide effort to improve environmental quality, referring to the 1992 United Nations Conference on Environment and Development in Rio and the recent five-year follow-up conference in Denver, Colorado. Participants were reminded that through the creation of the Ministry of the Environment, Morocco had demonstrated its commitment to environmental quality at the highest level.

Participants were also assured that USAID was also committed to improving environmental quality through the Urban and Environmental Services Project and related projects. The lessons of the workshop would speak to every aspect of daily urban life, including the quality of the residential environment, the workplace, commercial areas, and the management of the urban fabric, open space, and solid and liquid waste. USAID planned a series of actions following the workshop, including additional training, sensitization, and community participation programs, and finally, pilot projects.

Following an introduction to the day's agenda by the local consultant, the international consultant presented a general introduction to broad principles of environmental assessment and planning, followed by a slide show on the three international case studies.

Presentation of General Principles The first session began with a presentation of the five general principles, shown below, which the workshop aimed to instill in the participants.

OBJECTIVES OF THE WORKSHOP

- 1 *Ensure systematic consideration of environmental factors in the conception of projects*
- 2 *Integrate the environment into project planning to achieve a better balance between quality and cost*
- 3 *Consider environmental evaluation as a means of reducing costs not an additional burden or a luxury,*
- 4 *Establish the principle of systematic post evaluation to maximize lessons learned and improve project quality and*
- 5 *Create and sustain a team approach to projects among ANHI FEC and their partners*

Participants were reminded that the workshop was an outcome of work begun by USAID in 1993. In that year, the Programmatic Assessment of the USAID Housing Guarantee 004 (HG-004) Program effort to institutionalize and expand ANHI's earlier efforts to incorporate environmental considerations into project planning. The PEA recommended environmental checklists as a preliminary means of building systematic environmental consciousness on the part of project planners. An example of the checklist is shown in Annex B.

An evaluation in 1996 suggested that the potential benefits of systematic environmental assessment had been insufficiently understood and had not been promoted extensively among the staff of ANHI and FEC. A training program was proposed, of which the October 1, 1997 workshop was the first event. It was to be hoped that the workshop would be followed by more training programs, workshops, and inter-agency team planning sessions.

The checklist suggests a large and complex array of considerations. In the interest of clarity, the participants were told that the workshop would focus on achieving three principal environmental quality objectives in ANHI, FEC and other urban projects: decreasing project costs, avoiding hazards (protecting public safety) and increasing project value. The workshop would also address site assessment and site planning and design, two of the three main stages of project development shown in the box below.

**STEPS TO ACHIEVING
AN ENVIRONMENTALLY-SOUND PROJECT**

- | | |
|---|--|
| • SITE SELECTION | Avoid Major Environmental Problems |
| • SITE ASSESSMENT | Identify Constraints and Opportunities |
| • SITE PLANNING
& DESIGN | Avoid Constraints to Development
Use Constraints and Opportunities to <ul style="list-style-type: none"> • Decrease Costs • Assure Safety • Increase Value |

The international consultant emphasized that Morocco had an opportunity to insist on environmental assessment in advance of project planning and to avoid the added time cost and loss of effectiveness that typically accompany the environmental impact studies of completed project plans on which the United States and many other countries rely. In the typical sequence, a site is selected and a site plan prepared prior to preparation of the impact study. The major study required can significantly increase the cost of a project and rarely results in significant changes in a poorly-sited or poorly-planned project. By contrast, the use of systematic assessment throughout can not only help achieve the three fundamental objectives discussed above but can greatly minimize the scope of a subsequent impact study.

The remainder of the presentation used slides to illustrate the preferred process outlined on the following page and began with a reminder that while the incorporation of environmental factors into planning has a cost, that cost is offset by savings in site preparation, construction and later repairs as well as by enhanced project value. (A selection of the images used are provided in Annex C.)

Site Selection The process of effective site selection relies on the availability of needed environmental information. It is understood that the Ministry of the Environment is developing an environmental data base which will assist in this process. Ideally, it would be desirable to provide a national or regional basis for planning through the identification of areas broadly suitable for urbanization and other uses. Such a framework would assist municipalities in preparing or updating municipal master plans according to consistent criteria for development suitability.

To illustrate the approach, the next part of the presentation included examples of basic data maps, suitability maps for specific uses and composite suitability maps. The first set addressed a large region, the Potomac River Basin, and the second the part of the region containing the metropolitan area of Washington, D.C. The second set

specifically aimed to identify areas suitable for the future growth of the metropolitan area. Both sets of illustrations were taken from Design With Nature, the influential book published in 1970 by Ian McHarg, the landscape architect who pioneered the technique known as 'overlay mapping'.¹ The Potomac River Basin Study, directed by Mr. McHarg in 1965-66, was a landmark, the first ecological planning study conducted in the United States and the prototype for planning studies of this kind.

The next sequence of slides illustrated the point that traditionally people paid attention to what the land indicated about its suitability for different uses. Examples from various parts of Morocco showed:

- farms located above the best agricultural land
- terracing of erodible agricultural land,
- the location of a historic town on the lower slopes of a mountain, above productive agricultural land and outside the course of a mountain stream
- later additions to the town laid out in a manner that respects the river and its floodplain, keeps agricultural land open and is accessed by a road following the contours of the mountains
- a bidonville which, even though built of necessity, on a steep slope, has utilized steps and terraces to minimize erosion and increase safety

Site Planning The traditional sensitivity to site selection and site layout and design has tended to be forgotten as the availability of earthmoving equipment has made it easier to build in difficult sites. A particularly telling pair of images showed the same section of the Oued Fes within the City of Fes in 1917 and 1993. Between these dates, the natural banks of the river had been reduced and covered by concrete.

The next series of slides focused on drainage and road layout, emphasizing means of saving costs as well as maintaining environmental quality. The key messages were the desirability of keeping natural drainage channels open and in a natural or moderately managed state (using gabion baskets, for example, rather than constructing storm sewers or concrete-lined channels). Examples taken from a manual on flood control prepared for the Federal Emergency Management Administration² included a project that returned a concrete-lined channel to the equivalent of its natural state. Other illustrations compared roads laid over drainage channels, forcing the use of storm sewers, with roads following contours above channels and plans incorporating natural channels and green space into the road grid.

This theme led to a series showing some forward-looking community plans with increased residential densities to compensate for the inclusion of steep slopes, drainage channels and other natural features into a framework of multi-purpose green space (providing for flood control, visual open space, extending formal recreational and other open spaces, climate control and pedestrian circulation).

Site Design The next series looked at how multi-purpose open space could become usable green space, adding to the comfort of residents and enhancing the value of

¹ Ian McHarg was a founder of Wallace McHarg Roberts & Todd, one of the most respected planning firms in the United States and the firm with which the international consultant for this mission, Alison Massa, was formerly associated.

² Prepared for the Federal Emergency Management Administration by EDAA, in which Alison Massa was a Principal from 1979 to 1985.

individual developments and whole communities. The sequence included reminders of sensitive traditional approaches to building on steep topography, accommodating drainage, incorporating historical and cultural elements into design, providing for passive climate control and planning for pedestrian convenience and comfort.

The final sequence tied project-level treatment of environmental factors into the overall urban fabric and reinforced notions of land use efficiency, protection of traditional views (such as distant views of Meknes as a walled city), protection of natural habitat and, in the final shot of the forested greenbelt surrounding Rabat, protection of air quality and global climate.

Presentations of International Case Studies The international consultant made a single abbreviated presentation of the three case studies presented on separate days during the Training of Trainers Workshop. As described in the report on that workshop, all three case studies were from California, from regions with environmental similarities to parts of Morocco. California faces or has faced many of the environmental issues that concern Morocco. Although the United States tends to offer negative and well as positive lessons for planners around the world, the State of California has tended to be on the cutting edge of the urban and environmental planning field in its generation of planning techniques and policies.

The cases selected involved new communities rather than redevelopment projects since it had been anticipated that the practical exercise for the workshop would involve a new development (Al Manai or Majane II). The three cases were East Dublin, on a 7,500-acre site in multiple ownerships on the eastern edge of the San Francisco metropolitan area; Otay Ranch, a 23,000-acre property owned by a foundation ten miles east of the City of San Diego; and The Northern Sphere of the City of Palm Desert, a six-square-mile area also in multiple ownerships in the Coachella Desert of Southern California. Each is briefly described in Annex D.

As in the Training of Trainers Workshop, the central objectives of presenting these case studies were to illustrate the principles stressed in the introductory presentation and set forth in the guide (Annex E):

- to communicate the benefits of early environmental assessment
- to illustrate the theory and practice of systematic and rigorous assessment, and
- to illustrate how to respond to and make use of environmental constraints and opportunities and to use them to optimize the quality of the project by
 - assuring safety (from natural and man-made hazards),
 - reducing development and operating costs, and
 - increasing value through attention to comfort, convenience and visual quality.

In addition to these general messages, the cases illustrated

- the importance of planning to take account of or in association with neighboring properties and land uses
- the possibility that the existing urban and/or sewage master plans may need to be modified to respond to findings of an assessment of the environment of a specific site, and

- the need for a national and/or regional planning and environmental information base to guide urban master plans and provide a context for selecting appropriate development sites

Each project was required to produce an overall land use plan known as a "General Plan" or, more accurately, an amendment of an existing general plan. Each was also to produce a Specific Plan for all or part of the site, laying out in detail the proposed site development and infrastructure. Finally, each set of plans was to be addressed by an Environmental Impact Report.

Each case illustrates how, by systematically studying and mapping every relevant aspect of the site and its surroundings at the outset, assumptions that had been made in the pre-existing general plans were altered. Sometimes these changes were modest but with significant improvement in the three key factors (i.e., increased safety, reduced development cost, and enhanced development value). In at least one case, Otay Ranch, the change was radical, more than doubling the population proposed under the existing plan, a significantly greater increase in development value due to the introduction of non-residential uses, and protection of the natural environment of two-thirds of the site.

Presentation of the Workshop Case Study, Sharij Gnaoua The morning ended with presentation of a series of slides showing construction and finished conditions at Sharij Gnaoua, the ANHI clandestine settlement upgrade project in Fes, chosen as the case study for the afternoon exercises. The slides, presented by the local consultant, showed construction activities and completed improvements, together with analytical site maps which had been prepared by the private architectural consultants to ANHI.

Small Group Exercise

Session 1 Identification of environmental factors posing constraints or opportunities for development

For the afternoon, participants were divided into three groups, each with an animator and three trainee trainers. During the first session, each participant was given a base map showing topography, vegetation and existing development, a summary of site conditions and project objectives (see Annex E) and the brief guide to systematic environmental site assessment and site design (shown in Annex F). The group was given a brief orientation and asked to identify environmental factors, following the guide and project summary, on their own small-scale maps. During group discussion, these were marked by one of the trainees on a wall map and considered in terms of their effects as constraints to certain types of development or opportunities for others.

Session 2 Application of factors to site design

During the second session, each group was given copies of the constraint maps and synthesis from the project master plan and asked to work with constraints, following the second part of the guide, in preparing broad recommendations for planning that avoided hazards, decreased development costs and increased project value. The workshop concluded with reports from each group and a comparison of the plans produced.

4 Response to the Objectives

General Effectiveness The objectives of both the training of trainers and the workshop were achieved. The general discussions in the morning session, discussions during the working sessions and the presentations by representatives of the three groups all demonstrated that the introduction to the process had been generally effective. A number of concepts mentioned particularly during the presentation of the international case studies, had been taken in and applied to the circumstances of the exercise case study.

Participant Capacity to Contribute during the Workshop Participants experienced some difficulty in getting started in the first afternoon session, especially without the aid of the pre-analyzed information. However, with the assistance of one of the trainee trainers, participation began to build and finally under the guidance of the animator was very lively, thoughtful and effective.

By the second session everyone was fully engaged. Even those individuals from municipalities who did not actively participate until some time in the second session clearly appeared to be following the discussion keenly and deriving benefit from being included.

5 Discussion and Recommendations of the Workshop

During the workshop, the level of participation in discussions and during the afternoon exercises met and in some cases exceeded the expectations of TSS. Thoughtful and in some cases potentially influential recommendations came out of the plenary discussion. A key recommendation was the need for the national and regional or municipal governments to prepare an analysis of environmental suitability for development to guide project proponents such as ANHI. It was acknowledged that the existence of such a framework could have saved ANHI from some unfortunate site selection decisions. A second key recommendation was for the incorporation of environmental considerations into planning at all levels at the earliest possible time. Thirdly it was recognized that municipal master plans might need to be changed to respond to the findings of detailed project site investigations. (Each of these recommendations grew directly from the presentations, applied to Moroccan conditions.) The full set of recommendations is listed below. Those marked with an asterisk are the recommendations of Workshop participants. Others are included by the consultants based on their observations and/or interpretations of what was discussed.

- 1 Encourage the Ministry of the Environment to develop an environmental information system, focusing on regions under the greatest growth pressure which will allow a regional analysis of areas most suitable for growth and provide a guide to municipalities in revising municipal master plans
- 2 Require the incorporation of environmental analysis into the preparation of municipal urban and sanitation master plans

- 3 Work for a change in the law to require regular review of municipal urban and sanitation master plans and, as necessary, plan modification to take account of more detailed project site evaluations.
- 4 Consider requiring preparation of formal environmental impact assessments on municipal urban and sanitation master plans.
- 5 Encourage participation of Ministry of the Interior, Ministry of the Environment, the municipality, ANHI, FEC, utility providers and other regional and local interests in the preparation or revision of municipal urban and sanitation master plans and plans.
- 6 Encourage participation of ANHI, FEC, Ministry of the Interior, Ministry of the Environment, the municipality, utility providers and other regional and local interests in the planning of projects undertaken by ANHI and/financed by FEC.
- 7 ANHI needs to consider the context of its projects more thoroughly and to prepare maps that show the context and analyze off-site relationships more clearly.
- 8 ANHI needs to become more entrepreneurial in considering planning and provision for non-residential uses that will be a source of additional revenue and support cross subsidies. A clear opportunity to do this lies in the creation of integrated communities such as Al Manai.
- 9 Promote regular meetings among the Aelhei Alumni in place of or in addition to the previously recommended bi-monthly project planning and/or review meetings.
- 10 Promote the need for / responsibility of technicians to actively inform and sensitize politicians regarding the importance and value of considering the environment in policy formulation and planning.
- 11 Prepare a manual on recommended environmental planning and management procedures and responsibilities, with sections for municipal officials, private architects and engineers, ANHI staff, FEC staff, Ministry staff.
- 12 Present follow-up workshops to a broadened set of participants.

It seems reasonable to hope that most participants came away from the workshop at least with a recognition that environmental assessment is necessary and beneficial rather than a burden or a luxury. It is also hoped that the spirit of teamwork fostered by the experience will be sustained in regular reunions and joint planning and project review meetings. In particular, it will be important to involve the Ministry of the Environment, the municipalities, utility providers and other regional and local interests in the planning of projects undertaken by ANHI and/or financed by FEC. This mix of interests may encourage greater rigor and attention to a wider array of concerns, values and information in working with environmental factors.

6 Synthesis of Lessons Learned

Giving everyone their own maps, something the International Consultant has not done before, was very effective. The guide, which had been developed by the International

Consultant and used successfully before now appears to need some augmentation -- at least before it is incorporated into a more comprehensive document, as proposed

Experience showed that more assistance was needed with preparation and logistics. Everyone was very tired by the time Wednesday arrived. Perhaps not enough time was allowed for preparation. Despite extensive advance preparation, it only becomes clear where the emphasis should lie relatively late in the process. For example, everyone had assumed that Al Manar would be the selected case study. At the end of the training of trainers, it was clear that Sharij-Gnaoua would be a better choice. This left little time to develop the necessary materials. In addition, the training of trainers sessions took a great deal of work on the part of the consultants, rather than assisting them with preparation for the workshop as anticipated and as experienced elsewhere. Again, as a result of time pressures, the transparencies were not translated. Clearly, they should have been in French. This has been corrected in a handout sent to all participants.

During preparations, it became clear that ANHI needs to consider the context of its projects more thoroughly and to prepare maps that show the context and analyze off-site relationships more clearly. This is clearly illustrated by Majane in Meknes where each stage of the project is addressed in separate documents. This is also the case in Sharij Gnaoua where documents, while somewhat more complete than in other projects, are insufficiently comprehensive.

7 Follow-up Activities

The workshop initiated a process of training and sensitization which needs to be reinforced by additional workshops. These workshops should include more municipal and private sector participation, should address projects now being planned and should include site visits. The first such workshop involving the consultant team should take Al Manar in Marrakech as its focus. More limited assistance should then be given to members of the future trainers group and others to lead additional follow-up workshops.

The next objective should then be to adapt and present similar materials to municipal officials and NGOs to enable them to participate in the project planning, approval and decision making processes more effectively.

To assist the latter activity in particular, a manual should be prepared on recommended environmental planning and management procedures and responsibilities, with sections for municipal officials, private architects and engineers, ANHI staff, FEC staff, Ministry staff. This activity should accompany the preparation of improved and sector-specific checklists for which there is an important place, once the value of systematic assessment has been understood and internalized.

ANNEX A PARTICIPANT LIST

Participants list

Consultants Ms Alison Massa
Mr Sefiane BENYAHIA

Participants	Institution
Abdelhak DRISSI	ANHI
Rachid GUENNOUNI	ANHI
Chakib IBN MAJDOUB	ANHI
Nouiredin TAZI	ANHI
Abdelfettah BENAÏSSA	ANHI
Oussama EL KHATTIBI	ANHI
Abdeslam Ould Aboubia	ANHI
Abdelhamud EL BOUZIDI	FEC
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Bouchta EL KARIMI	Municipality of Bengueru
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Mustapha EL BAKKOURI	Municipality of Tetouan Al Azhar
Ahmed FAKIHI	Urban Community of Tetouan
Abderrahmane CHORFI	Architecte
Amy Nolan	USAID
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ANNEX B EXAMPLE OF ENVIRONMENTAL CHECKLIST

ANNEX C GUIDE FOR PROJECT ENVIRONMENTAL EVALUATION

PRELIMINARY REQUIREMENTS -- Define project objectives

STEP 1 SITE SELECTION -- For each alternative site, perform a rapid check of

General Location	PDM designation adjacent uses proximity to existing/planned employment sources transit transportation routes general availability of utilities and services
Physical Conditions	Presence of potential fatal flaws -- unstable soils flood hazards toxic/hazardous materials valued/protected resources or endangered species habitat etc

STEP 2 SITE ASSESSMENT - For selected site, assemble, map and analyze data

Topography	Slope drainage channels elevation
Aspect	Solar exposure views and vistas predominant wind direction & exposure
Geology and Soils	Stability erodibility seismic response soil compaction / rippability bearing capacity cracks and faults permeability etc
Drainage	Surface streams stream corridors designated flood plains aquifers depth to water table water quality concerns
Vegetation	Areas with rare plants or plant associations important as wildlife habitat
Existing Land Use	Agriculture forests commercially valuable minerals cultural sites protected area buffers other valued zones to be respected etc
Toxic Substances	Proximity of any toxic or potentially hazardous materials
Water Quality	Potential for project to result in water quality degradation
Air Quality	Proximity of any sources of air emissions incompatible with housing
Noise	Proximity of any sources of noise that might result in unacceptable interior or exterior noise levels in the project
Transportation	Capacity of access road(s) major streets and highway(s) parking areas transit service etc pedestrians and cycle paths
Utilities/ Infrastructure	Availability and capacity of water supply sewers wastewater treatment solid waste disposal/treatment power street lighting
Public Services & Amenities	Proximity of parks and open space for play active and passive recreation schools shops health and emergency services etc
Visual Quality	Views to and from site deserving protection
Cultural Features	On-site or nearby features requiring protection or suggesting incorporation into the project

STEP 3 PLANNING AND DESIGN

A Site Planning to Achieve Safety Objectives

- Avoid
 - Landslides
 - Seismic instability
 - Flood hazards
 - Toxic and hazardous materials
- Incorporate features to limit the effects of external hazardous/undesirable conditions

B Site Planning to Achieve Cost Objectives

- At a minimum observe identified cost ceiling
- Meet legal requirements for speed of approval
- Identify cost-effective multi-purpose ways to address environmental constraints

C Site Planning to Achieve Amenity (Value Enhancement) Objectives

- Create a sense of place and identity
 - Use constraints positively
 - Incorporate cultural features
 - Protect and incorporate views
- Make development comfortable - plan for
 - Maximum passive heating and cooling
 - Maximum wind protection
- Integrate the development with its surroundings and incorporate features to limit the project's adverse environmental effects
- Draw on solutions already available in historic patterns

FINAL CHECK

- Review for adherence to preliminary and interim reviews
- Final site plan grading plan
- Architectural plans
- Specifications