

I. Introduction

The village of Aït Iktel is located in the western High Atlas, 100 kilometres north-west of the city of Marrakesh. Like many of Morocco's thirty thousand villages, Aït Iktel existed in relative seclusion until recent years, relying mainly on traditional village organizations for its survival. Although situated next to the Aït Adle dam, the village's 122 households had no electricity. The past two decades have witnessed widespread drought, and as a result the village women were obliged to spend many hours each day fetching and carrying water from faraway sources. This difficult situation led villagers to appeal for help from family members who are emigrant workers.

Over the past few years the Moroccan government has admitted its shortcomings in addressing challenges such as the battle against poverty in rural areas and meeting the country's housing requirements. The investment of communities and private enterprise has since been greatly encouraged, and this has resulted in a favourable climate for the creation of non-governmental organizations (NGOs).

A native of Aït Iktel – who is fully involved in community activities and has a good knowledge of his own Berber tribe, the Ghoujdama – initiated a development programme in his home town. Following a visit to the village, one researcher called the experience of Aït Iktel a 'modern fairy story'.

II. Contextual Information

a. Historical background

Aït Iktel is part of the territories of the Ghoujdama Berber tribe, who have a history of self-government. Until 1933 no outside government exercised authority over the region. Its tribesmen favoured *siba*, or defiance of authority.

Aït Iktel's 1,849 inhabitants are spread over the three clusters of Tighermt (fortified granary), Toukart and Aït Khaled, named after family lineage. Agriculture, mostly grain, is the traditional source of income. With antiquated methods, such as manual harvesting, agricultural production is very much subject to weather conditions. A number of olive groves are spread over irrigated areas. Due to the scarcity of fodder, cattle raising is usually limited to the essential needs of individual households.

Over the past thirty years the economic mainstay of Aït Iktel has been the flow of remittances from emigrant workers. Each family has at least one member working in other cities or abroad, who provides them with the means for everyday consumption.

Following the Aït Iktel community's demand for help in improving access to water, in 1994 a well and a manual pump were installed. The population showed its organizational skill by

their good maintenance of these new installations. Encouraged by the outcome, influential emigrants founded the Association Aït Iktel de Développement (AID) in 1995 and fully involved themselves in the development of their native village.

b. Local architectural character

The architecture of Aït Iktel is characterized by inlaid stonework in a variety of patterns. Structural walls are of local stone embedded in clay-like mortar. Room proportions are determined by the length of the wooden beams that bear the ceiling or the floor above. Flat terraces are made of a layer of branches steeped in moist clay and then covered with a thin layer of compacted earth. Wealthier houses have elaborately carved wooden ceilings. Since the 1960s recycled plastic sheets have been applied between two layers of moist clay, improving insulation. Windows are framed with white cement or limestone, while the openings themselves (which rarely contain glass) are ornamented with traditional ironwork. The fine traditional woodwork formerly found on doors is scarce today.

Houses are cubic in shape, with living spaces organized around a courtyard. They usually contain all the functions of rural dwellings, such as a corner for water crock, mill, stable, etc. Each room is used for a variety of functions. The form of the village clusters reflects the subdivision of properties between multiple heirs. Almost all Aït Iktel's buildings are constructed in a traditional manner.

Many emigrants are construction workers who have brought new construction techniques, as well as new lifestyles, to their home town. Furnishing is a recent phenomenon. The small number of new buildings that exist have concrete frames with cement block infills.

Generally, nearly all of Morocco's government buildings, such as schools and dispensaries, are built in pre-cast concrete.

c. Climatic conditions

The region is semi-arid and has a continental climate. Precipitation varies between 200 and 300 millimetres per year. The altitude is about 1,100 metres. The soil of this area – originally forested with juniper trees (used in construction), holm-oaks, thujas, pines and fruit trees – is largely impoverished due to the deforestation that has taken place since the nineteenth century, & is threatened by erosion. The site slopes about 15 per cent towards the south-west.

d. Immediate surroundings of the site

Aït Iktel is spread along a valley opposite the village of Abadou. Villages in the neighbourhood have similar architectural features, only differing in the number of recent constructions. The landscape is shaped by terraced agricultural land and olive plantations. A 12-kilometre asphalt road, built in 1996, links the market in the north-west of the village to a main road. The asphalt road has considerably improved the accessibility of this otherwise isolated area. All other roads, both internal and those that connect to neighbouring villages, are irregular earth and stone paths.

III. Programme

a. Conditions of programme formulation

The founding of the Aït Iktel Association results in part from the recent dynamic history of NGOs in Morocco, in which Ali Amahan, a native of the village, was highly involved.

It all started with the closure of a number of factories in France during the 1980s, as a result of which emigrants were encouraged to return to their homelands. However, the French authorities soon became aware of the emigrants' reluctance to leave their European standards of living and return to villages that lacked even a minimum infrastructure. The year 1986 saw the creation in France of the Association Migrations et Développement (MD) (initially named *Retour et Développement*), which aimed to use emigrants' own skills and funds to initiate improvement projects in their homelands. In 1989 the first village was equipped with electricity under this scheme.

In 1992 Ali Amahan formed the Association Socio-culturelle des Ghoujdama, which brought together members of the tribe who had moved to Casablanca and Rabat. In 1994 the Association Migration et Développement Local (MDL) was founded, of which Amahan was a founding member and president. This local federation gathered together some forty-five rural NGOs that had been initiated by the MD. It aimed to combine the efforts of emigrants living abroad with those of Moroccans with rural backgrounds living in the big cities. As an intermediary between the France-based mother association and those of local villages, MDL participated in the growth of rural NGOs in southern Morocco and the High Atlas, areas that have a substantial number of former emigrants.

In order to implement projects, MDL defined three conditions to be met by communities asking for its assistance:

- that the village community should create a local association to act as legal representative for all partnerships, to mobilize the local community and to ensure its sustainability.
- that projects should address all community members, not a limited section of the group, e.g. the more vocal or more affluent members.
- that beneficiaries should contribute up to 40 per cent of project funding.

The Aït Iktel Association was founded in 1995 as a member of the MDL network. It benefited from the wealth of experience that had already been built up in community-driven development programmes, whereby the involvement of users is considered a major asset in project implementation. Such projects are not imposed on communities; rather, these communities are helped to prioritize their demands and needs, resulting in clearly defined projects.

b. General programme objectives

The general objectives of the programme can be summarized as follows:

- to provide basic social services and infrastructural facilities to a fairly isolated community.
- to organize economic activity and resource management.
- in the process, to empower the local community by giving them control over decisions and resources.

c. Functional requirements

The objectives set out above were implemented through a number of projects:

Infrastructure:

- electrification of the village.
- installation of a water-supply network.
- improvement of access to education.
- improvement of the existing communal dispensary.

Economic activity:

- improvement of the irrigation system.
- creation of a craft workshop.

In this project the organizational aspects are almost as important as the physical implementations. All projects have been undertaken with the participation of the villagers themselves. They were involved in investment decisions, have financed projects and used their professional skills, and have become the owner of the assets created. These assets are managed by the community through the association.

IV. Description

a. Project data

The water-supply network consists of a pump room of 6 square metres, a manually dug well, a tank and a piping network. The network pumps water to street fountains situated at the entrance to each of the three village clusters.

The water-supply installations are located uphill at the south-west end of the village. A small room next to the well shelters the mechanical pump; it has a diameter of 2 metres and a depth of 20 metres. Further south-east, the natural slope of the site has been exploited to build a semi-underground tank of 105 cubic metres; it is estimated to hold enough water for three days' consumption in the village. It has three purifying filters and is operated under the supervision of the communal health officer.

Reportedly, this project once fully provided for the needs of the village, but the lowering of the underground water level has necessitated an additional installation. A larger project was subsequently implemented across the valley, near the village of Abadou, where a second semi-underground reservoir was constructed next to an existing government-built water tower. It has a capacity of 430 cubic metres, and is estimated to be able to supply water to eight thousand people. This project complements that at Aït Iktel, and fulfils the water requirements of the village of Abadou. Connection to other villages in the neighbourhood is currently under way.

The prefabricated village dispensary, situated downhill and near the *souk*, has been repaired and equipped with a water supply, a sewage system and solar-powered electricity. A low wall has been built around the site. The association acquired an ambulance and undertook the management of the dispensary.

The electrification of the village was undertaken through the creation of a local network providing street and private lighting. The 22-kilowatt diesel generator is housed in a 24-square-metre room adjacent to the water tank. The main cable runs underground up to a distribution point close to Tighermt, where it divides into three branches to serve each village cluster separately. The project provided for each house to be equipped with an electric meter and interior sockets. A 15-square-metre room was later added to the electricity generation complex. This has provided the space to house a library, which is also used as the association's office.

Educational facilities are located in the middle of the village cluster of Tighermt, in a two-storey traditional house which has been restored. It has a total area of 165 square metres. It includes, on the ground floor, an information centre, storage space and utilities, around a small courtyard; and on the first floor, a classroom and a workshop. The information centre, classroom and workshop respectively have an area of 40, 24 and 32 square metres.

The irrigation of agricultural land was formerly carried out by means of an earth channel that had been cut along the valley, east of the village. It irrigated 240 hectares and required regular maintenance. A new canal, 2.5 kilometres in length, has been built in reinforced concrete at the same location. The various improvements have served to increase the irrigated area by 26 hectares. This canal, or *segua*, crosses the valley over a stone-built bridge, which also permits pedestrian passage.

b. Evolution of design concepts

As is the case with most rural areas, the layout of Aït Iktel was not determined by any premeditated plan. Choice of building location has mainly been guided by the availability of land and budget.

The electricity generator and water tank are located uphill, in the south-west of the village. This is sufficiently far away to ensure that the village is not polluted. In both water-supply projects, the natural unevenness of the land has helped to partially conceal the semi-

underground tanks within the landscape.

Educational facilities are located in a restored house in the village. Conveniently, the necessary functions and services were already provided here.

In general the association has attempted to maintain the local character of the village. It has fortunately been able to prevent some private constructions using concrete and cement-block façades. In the case of a new school donated by a Moroccan bank, the association intervened to change the design of the originally brick exterior walls, replacing them with local stonework.

The small complex formed by the electricity generator, water tanks and library is merely functional. Price, function and simplicity seem to have been the main criteria for the design.

The three water fountains at the entrance to each village cluster are built with local stones and follow the form of the country's traditional fountains.

The two-storey house providing educational facilities has been restored using local traditional building techniques, apart from a metallic stairway to the roof. A stone-built arched doorway leads to the courtyard, giving access to the information centre, storage areas and lavatories on the ground floor. A stone stairway leads to the first-floor terrace with access to the classroom and workshop. Recovered old wood-carved columns have been integrated into the classroom. Both the workshop and information centre are spacious and oblong in shape.

The concrete *segua*, or irrigation canal, is functional. Its geometric aspect imparts a touch of modernity and a feeling of order to the landscape. To the south-east it crosses the valley over a massive bridge. By the texture of its stonework, the *segua* bridge recalls the village architecture, while its arched structure has a vocabulary of its own. It has become a landmark in the area.

c. *Structure, materials, technology*

Building forms and techniques have been dictated either by traditional knowledge or by the construction experience of the village's returned emigrants.

The massive bridge of the *segua* and the structural walls of the electrical complex were built using local stonework. Construction work in the restored house also used local techniques and finishes, with the addition of wooden windows and tiled lavatories.

The *segua* is built in reinforced concrete. So, too, are as the water tanks, which are tiled inside. The small pump room for the water supply is built in concrete with cement-block infills and is poorly finished.

d. *Origin of technology, materials, labour and professionals*

All construction materials and techniques are local. For the village electricity supply, electric

meters and internal sockets were purchased at wholesale prices by the association, which also oversaw their installation by local electricians. The generator and one of the pumps are European-made.

The community contributed to the project costs with actual work during construction. Specialized manpower was remunerated, and was selected from among the local masons, bricklayers, carpenters, ironworkers, electricians, plumbers and painters. If necessary, the professional abilities of emigrant workers were called upon.

All the projects were implemented by the Association Aït Iktel de Développement (AID).

The association mission is as follows:

- to help implement the provision of social, cultural and educational facilities to its members and their households.
- to secure and manage the financing of projects.
- to utilize and manage the electricity plant and network.

V. Construction Schedule and Costs

a. History of project

The schedule of projects implemented by the association is as follows:

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|------|---|
| 1994 | First well and manual pump. |
| 1995 | Creation of Association Aït Iktel. |
| 1995 | First water-supply project, at Ziamt. |
| 1996 | Repair and fitting out of village dispensary. |
| 1996 | Electrification project commenced. |
| 1997 | Library installed. |
| 1998 | Restoration of house for educational facilities. |
| 1999 | Irrigation canal built. |
| 2000 | Second water-supply project, at Temerssatine, Abadou, in partnership with Association Nahda N' Aït Abadou |

b. Total costs and main sources of financing

Each project has been implemented through the establishment of a partnership. Local participation includes the supply of the land and labour, which is added to the funds; the supply of equipment; and/or the know-how brought by the partners. The total costs given below include the price of equipment and fixtures.

	Partner	Local participation	Total cost
1 st water-supply project	Japanese Embassy	MAD 43,180	MAD 473,180
Communal dispensary	French Embassy	MAD 38,000	MAD 138,000
Electrification	MDL	MAD 243,148	MAD 607,870
Library	MDL	MAD 39,840	MAD 64,840
Educational facilities:			
Classroom	French Embassy	MAD 8,500	MAD 68,500
Information centre	French Embassy	MAD 38,055	MAD 98,055
Workshop	German Embassy	MAD 38,055	MAD 98,055
		Total MAD: 84,610	Total MAD: 264,610
Irrigation	Japanese Embassy	MAD 40,090	MAD 643,800
2 nd water-supply project	French Embassy	MAD 66,200	MAD 144,933
		Total MAD:	MAD 517,013
equivalent in USD (MAD 10 = USD 1)	Total USD:	USD 51,700	USD 224,000

c. *Comparative costs*

In Morocco's cities, the average cost of 'economical' construction is about MAD 2,500 per square metre. The construction in Aït Iktel is estimated at about MAD 1,300 per square metre for buildings with expensive stonework and wooden roofs. In the most recent land purchase, the association paid MAD 110 per square metre.

The cost of the complex housing educational facilities was about MAD 1,600 per square metre including the land, furnishing and equipment.

When the Association Migration et Développement Local approached the Office National d'Electricité to define a strategy for the electrification of villages throughout Morocco, the cost of bringing the network to a distribution point at the village entrance was estimated at MAD 5,000 per household.

The electrification of Aït Iktel has been undertaken at a cost of MAD 5,740 per family, including donated labour. This amount covers all distribution systems, street lighting, internal outlets and energy-saving light bulbs as well as the expenses of eight poor families. The community also enjoys ownership of the network.

d. *Maintenance costs*

The association has created a 'labour bank': in addition to the work required for the construction of projects, each household must provide three days of work per year for various tasks such as the maintenance of the *segua* and public facilities, or garbage removal. The maintenance of installations costs MAD 2,200 per month.

The general concept of the projects is defined by the poorest people's capacity to pay. For instance, the electricity project was designed in such a way that the cost of the consumption of 1 kilowatt per month (MAD 23.5) would not exceed the expense of consuming one candle per day (i.e. MAD 30 per month).

The electricity bill includes MAD 9 towards costs of the generator, MAD 9 towards costs of the network, and consumption charges of MAD 5.5 per kilowatt. It is calculated that costs will be recovered within five years. The calculation allows for diesel consumption as well as the expenses of eight poor households under the care of the community. Prices are fixed at the general assembly. Billing and the issuing of receipts are carried out by a local person appointed and paid by the association.

Each family pays a fixed rate of MAD 10 per month for water, regardless of the consumption.

VI. Technical Assessment

a. Functional assessment

Today, the community of Aït Iktel enjoys, manages and owns a set of facilities made available by projects implemented through the association.

Electricity runs four hours per day, assuring a minimum of comfort to all including the poorest, while more well-off families have additional solar equipment. Streets are lit during the evenings; almost all families are equipped with television sets and some have dish antennae. The use of wood and, consequently, deforestation has decreased.

The whole population has access to water through new sources. The water from the irrigation canal is also used for construction, for washing and for watering animals. The new canal saves maintenance work and has increased irrigated areas by about 10 per cent.

The non-formal school has a schedule that has been adapted to the needs of the community – it has been devised to enable children to help their families in daily chores, and its programme addresses students of various ages. Women and girls, freed from the heavy labour of water-carrying, have access to literacy and the weaving workshop. Reportedly, 85 per cent of girls between the ages of four and nineteen are in school or in literacy classes.

The information centre has helped increase awareness of hygiene, health, nutrition, culture, etc. The community health officer has reported improvements in hygiene. The dispensary has been upgraded into a health centre, and with the recently purchased ambulance people can reach the nearest hospital, which is 70 kilometres away.

c. Choice of materials, level of technology, design features

The level of technology, choice of materials and design features are in general guided by a wish for simplicity and economy. Traditional techniques and those introduced by emigrant

workers have responded to priorities.

The restoration of the building housing the educational complex has been undertaken with respect to traditional local architecture. The use of old carved wooden columns pays tribute to local craftsmanship in this learning environment. The simple furnishing of the complex contributes to a harmonious sense of space.

d. Durability and long-term viability of the project

This project began after the community proved its sense of responsibility with its ability to maintain the first manual water pump. The community's involvement at all stages, its ownership of the assets, and the fact of ongoing costs being calculated on a capacity-to-pay basis, should combine to support the long-term viability of the project.

VII. Users

a. Description of those who use or benefit from the project

According to the association, the average per capita income of the village population is about USD 90 per year (the national minimum wage is USD 140 per month).

Aït Iktel is one of the thirteen villages that comprise the district of Abadou. According to a 1997 survey, the district's 45,528 inhabitants had an illiteracy rate of 81 per cent (against a national average in rural areas of 75 per cent); less than 40 per cent attended school; and only 2 per cent of the population lived within 6 kilometres of a local dispensary.

According to a recent survey, of the 1,849 inhabitants of Aït Iktel, 62 per cent are under the age of twenty-five, and 82 per cent of children between the ages of six and fifteen go to school.

A total of 142 persons have emigrated from the village and are the main providers for their families.

b. Response to project by clients, users, community

In this project the clients, users and community are one and the same; they also provide the labour. They are all members of the association and they benefit from and own the assets. The facilities that have been brought to the village play an important role in easing everyday life, especially for women.

The association leaders have worked closely with the *jemaâ*, the traditional assembly of heads of family. The organization and motivation of the community takes place through this village institution. Each member's opinion has to be considered and debated until a general consensus is reached; in this way, villagers perceive projects as their own and are thus happy to collaborate. This process has allowed established traditions to be adapted to the new requirements.

The association has facilitated community access to available grants, for example for building a new school through a programme launched by a Moroccan Bank (BMCE).

The association was one of the first organizations to negotiate and sign an agreement with the Ministry of National Education whereby the national education programme could be adapted to local needs: public school hours and holidays are now fitted around the rhythm of village life, helping access to education. Teachers were hired from the community, according to ministry requirements; they are more readily accepted by the community and speak the Berber language.

A longer-term community cattle-raising project has more recently been added. Studies for its implementation have been finalized. This project is designed to ensure a per capita income through the production of milk. The income will allow the villagers to invest in improving their agricultural products. It is to be followed by a sewage network project.

The accomplishments of the Aït Iktel Association have set a model for the surrounding villages, most of which have now created their own associations. The village of Abadou, across the valley, was Aït Iktel's local partner in the second water project. In this village, electrification, a water-supply network, a non-formal school and an information centre have also been independently implemented.

Others have thus far implemented water works, schools and workshops in their own communities. At 21 *douars* (settlements), manual pumps have been installed as a test to evaluate people's preparedness for project maintenance.

The Aït Iktel Association readily shares its experiences with others and has initiated the union of ten local associations. This small federation has set up a literacy programme for one thousand people and professional training for three hundred, and a communal student hostel for girls is currently under construction at Aït Adel near the dam.

On occasions the association has been able to use the professional services of local administrative agents, who are usually underemployed in their own work. At times they have participated in the activities of the village. Together with the interest the village has created among local and foreign students and visitors, Aït Iktel has become a little centre of attraction in the area.

Almost all who are aware of the project are acquainted with the problems of the rural world. They are sensitive to this project and agree on the need for promoting a successful approach. The Aït Iktel Association is perhaps the country's leading practitioner in the field.

Greatly inspired by this experience, the sociologist Fatema Mernissi wrote *Les Aït Débrouille*, in which she traces the history of the earlier associations and testifies to the success of Aït Iktel. She is currently writing another book on the subject.

VIII. Persons Involved

Project personnel

Ali Amahan, an Aït Iktel native, is the initiator of the project. He has a doctorate in anthropology, and wrote his dissertation on his tribe. He is Chef de Cabinet of the Ministry of Culture, founder of the Association Socio-culturelle des Ghoujdama, founding member and former president of Migrations et Développement Local, and a member of the Association de Développement.

Mohamed Amahan, also an Aït Iktel native, has been the president of this association since its formation. He is presently also the treasurer of Association Migration et Développement Local. An agricultural technician by education, he has worked at a subsidiary of the Office Chérifien des Phosphates, as factory director and project manager. He is now retired and dedicates his time to the community. All practical implementations of projects are undertaken under his supervision.

Saïd Mouline is the director of the Direction de l'Architecture at the Ministère de l'Aménagement du Territoire de l'Environnement, de l'Urbanisme et de l'Habitat. He has brought his support to this project and provided the graphic documentation on this project. This department has recently organized a development workshop in the village.

Homeyra Ettihadieh

May 2001

References

Amahan, Ali, *Mutations sociales dans le Haut Atlas, les Goujdama* (Paris, Editions de la maison des sciences de l'homme/Rabat, Editions la Porte) 1998.

Amahan, Ali, 'La face humaine de la pauvreté', *Migrations et Developpement Local*, Rabat, Morocco, Economic Development and Poverty Reduction Workshop, Mediterranean Development Forum, September 3–6, 1998.

Mernissi, Fatema, *Les Aït Débrouille*, contribution to the World Bank Mediterranean Development Forum (Editions le Fennec) 1997.

Mernissi, Fatema, *Social Capital in Action: The Case of the Aït Iktel Village Association*

Aït Iktel, urbanite en Haut-Atlas, Cahiers d'architecture et d'urbanite, Direction d'architecture, Ministere de l'aménagement de territoire, de l'environnement, de l'urbanisme et de l'habitat

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