INTRODUCTION
This Moroccan case study set out to look at the impact of environmental degradation (chiefly diminishing water supply and deforestation) on the rural population, and particularly women. In general, women play a key role in the management of natural resources in the Rif mountains of Northern Morocco. They carry out all domestic tasks, participate in livestock rearing and handicraft production and are responsible for the supply of water and wood. On top of this they take care of the young and the old. These roles have taken on a new importance because environmental problems have impacted on agricultural activity and livestock rearing, and men have been forced to leave their villages to try and make up livelihood shortages. The research looked at the extent to which women, whose daily tasks and responsibilities confer on them a degree of natural resource dependence, are the most deeply affected by environmental degradation. It also examined whether all women were affected equally.

CHOICE OF STUDY AREA
The area covered by the study has suffered severely from deforestation, erosion and dwindling water supplies. The research studied two different socio-spatial environments, which provide comparative material for an analysis of the relationships and interactions between women, population and the environment. The two areas are both rural with long-established sedentary peasant populations, but they differ in terms of their relationship with the urban environment and economy, and the amount of money coming in from outside.

The first area is in that part of the north westerly province of Tétouan where the mountainous (Jbala) terrain juts into it from the east. Rainfall is heavy, concentrated and fierce and is a serious cause of erosion. Population density is relatively high, leading both to land clearance for cultivation and intensive collection of wood for domestic handicraft production, industry and construction work. The expansion of cultivated land at the expense of forest and pasture destabilizes the environment without actually providing the agricultural production needed by the community. Out-migration is increasingly resorted to.

The second area is in the province of Al Hoceima, located about 150 miles to the east of Tétouan in the high central Rif mountains. Here, on the Mediterranean coast, micro-climates are heavily influenced by altitude, the extent to which a site is closed in, and the direction in which the slopes face. The winters are cold with frequent, heavy rainstorms and a considerable amount of snow. The summers are dry, but tempered by the altitude. There are stands of oak or cedar forests, but these cover a smaller area than scrub (matorral). In places, even this has disappeared altogether as a result of intensive clearing. The exceptionally heavy pressure exerted on the hinterland of Al Hoceima and Nador contrasts starkly with the poor quality of the resources. The peasants seek to supplement these resources by growing cannabis, a practice which dates back several decades, mainly in the central mountainous area, and brings in substantial amounts of revenue, especially for middle men.

The limited nature of economic activity (agriculture remains on a subsistence basis because agricultural holdings have been fragmented into small plots and the soil is often poor, while coastal fishing is not very profitable), together with the difficulty of communication in this area, explain the low level of commercial activity and the small scale of the markets (souks). Paradoxically, in this part of Al Hoceima are found some exclusively female souks (currently eight in number), the only ones in Morocco. These souks are reserved for single women (unmarried, widowed or divorced). Men and married women cannot participate.

There appears to be a long history of emigration in the region, going back to the second half of the

---

1 This study was part of a four country research project into 'Women, Environment and Population' implemented by UNRISD, Geneva and funded by UNFPA, New York.
19th century when the inhabitants of the Rif left to work on settlers' farms around Oran in Algeria. This process was accelerated by the growing imbalance between population and resources. Independence, and particularly the 1960s, marked a massive departure for Western Europe, chiefly Germany and the Netherlands, from the hinterland of Al Hoceima and Nador. This trend gradually spread to the southern and western parts of the mountains, and the range of destinations widened to include Belgium, Spain and France, Libya and the Gulf.

These few, incomplete details are enough to indicate the vast differences that exist between the eastern and western parts of the Rif region, one of the most highly populated mountainous areas of the Mediterranean basin, where 70 per cent of the population is rural. In this article we shall be comparing two villages (douars), one from each province:

- **Al Haoud** (87 households), located in the commune of Jouamaa in the westerly province of Tétouan, where the main issue affecting the local population is migration for work. Reafforestation and enclosure are forcing both young and older men to leave the village in search of work in the nearest town, Tangier. These men tend to return home in the evening or at weekends.

  Al Haoud is a Jbala settlement. Female labour forms the basis of the Jbala economy. The prevailing sexual division of labour dates back to the time when men were mobilised by the political authorities for long periods to serve as border guards, leaving women to do all the work including that traditionally reserved for men.

  'Economize and recycle' is the slogan of the Jbala peasants, and it provides the key to their survival. To save on wood five or six families bake their bread together in one oven, each bringing their own dough and an armful of wood. Afterwards, the embers are shared out between them.

- **Iatmanène** (69 households), in the commune of Imrabenène in the province of Al Hoceima, is sharply affected by emigration. In a third of households surveyed one member is working abroad and, in a fifth of all households, two or more individuals are absent.

  Iatmanène is the only village of the twelve studied in this project which has water and electricity. A major difference between the two villages compared here is that in Iatmanène two thirds of the households have toilets and a third have septic tanks. The availability of water together with a system of purification means that the villagers consume relatively large amounts of water, something they are fully aware of. Knowledge about hygiene is particularly good in this village, reflecting not only the presence of running water but the standard of education and the degree of openness towards the outside world (an issue to which we will return).

Our comparison of the two villages will concentrate on the varied consequences of out-migration.

### 3 SUPPLEMENTARY INCOMES

The two villages differ in their sources of off-farm income. In Al Haoud village the main source comprises the proceeds of sales of dwarf palm produce. In the past, the village had been surrounded by cork woods and the cork oak was made into charcoal and sold to raise cash for the purchase of essential items. In Iatmanène, households live off the money sent or brought back by migrant workers. Iatmanène is also the only village where girls sew, either for members of the family or for others. Because of the existence of a women's market nearby, children here are involved in petty trading.

### 4 HOUSING AND LIVING CONDITIONS

Four per cent of the housing in Al Haoud is of modern design, as opposed to 38 per cent in Iatmanène. While there are no houses of four or more rooms in Al Haoud, 75 per cent of those in Iatmanène fall into this category. This certainly reflects the higher standard of living in Iatmanène, and the high expenditure out of remittances on housing, but it is also a function of the greater number of extended families in Al Hoceima province and the greater preponderance of nuclear families in the province of Tétouan: 91 per cent of households live on their own in Al Haoud (the young leave the paternal home when they get married), as opposed to 71 per cent in Iatmanène.

Iatmanène is the only village of the twelve studied in this project which has water and electricity. A major difference between the two villages compared here is that in Iatmanène two thirds of the households have toilets and a third have septic tanks. The availability of water together with a system of purification means that the villagers consume relatively large amounts of water, something they are fully aware of. Knowledge about hygiene is particularly good in this village, reflecting not only the presence of running water but the standard of education and the degree of openness towards the outside world (an issue to which we will return).

The relatively high socioeconomic standing of the inhabitants of Iatmanène is also reflected in the

---

2 In total, 12 villages were studied in the course of the research.

3 The same pattern has been observed in the province of Errachidia (in Southern Morocco), as an attempt by women to cope with the shortage of natural resources in that area.
system of lighting since 79 per cent use gas compared to 44 per cent in Al Haoud. Moreover, 29 per cent of latmanène households have a television, run off mains electricity or car batteries.

5 STANDARD OF EDUCATION
The population of Al Haoud has markedly higher rates of male illiteracy and higher rates of quranic school attendance than the population of latmanène, as Table 1 shows. The most interesting feature here is that while in Al Haoud only boy children have attended or still attend the quranic school, in latmanène 48 per cent of those attending primary school are girls.

6 WATER SUPPLY
The main effect of deforestation and growing scarcities of water has been to increase the workloads of women and girls. Villages in the province of Al Hoceima stand out for the much greater role played by girls in water collection compared to Tétouan. latmanène is distinctive in that it is the only village of the twelve surveyed to enjoy piped drinking water. In Al Haoud it is mainly women alone who collect wood (33 per cent of trips in summer and other seasons), or women and girls together (33 per cent of trips in summer and 24 per cent in the other seasons). By contrast, in latmanène this job is mainly carried out by girls (48 per cent of trips in summer, 50 per cent in other seasons) and by men (35 per cent in summer and 31 per cent in other seasons).

Table 1: Illiteracy and Quranic school attendance, northern Morocco

<table>
<thead>
<tr>
<th>Heads of Households (male, %)</th>
<th>Other Household members (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Illiteracy</td>
</tr>
<tr>
<td>Al Haoud (Tétouan)</td>
<td>52.5</td>
</tr>
<tr>
<td>latmanène (Al Hoceima)</td>
<td>37.5</td>
</tr>
</tbody>
</table>

Note: The average age of household heads is relatively high in latmanène, given the greater prevalence of extended families there. This means that disparity in educational attainment on an intra-village level is even more marked for prime age males.

* Ever attended school.

In latmanène, boys and girls only start fetching water after the age of nine, perhaps because school attendance is fairly widespread amongst children of both sexes. But in Al Haoud, 14 per cent of girls and 11 per cent of boys start fetching water before the age of seven.

7 WOOD FUEL COLLECTION
Both Al Haoud and latmanène have been severely affected by deforestation. In latmanène the process started earlier and now the only woodfuel sources remaining are the dry branches of almond trees, dead or infertile fig trees, and the leaves of prickly pears, reeds and bushes.

In Al Haoud it is mainly women alone who collect wood (33 per cent of trips in summer and other seasons), or women and girls together (33 per cent of trips in summer and 24 per cent in the other seasons). By contrast, in latmanène this job is mainly carried out by girls (48 per cent of trips in summer, 50 per cent in other seasons) and by men (35 per cent in summer and 31 per cent in other seasons).

4 This is an exceptionally high figure compared to other villages in Al Hoceima. Nevertheless, the general point holds that there is a significant level of school enrolments among girls in rural Al Hoceima, compared to virtually zero rates in rural Tétouan.

5 This was funded by a worker who migrated to Casablanca.
Throughout our survey, we found that the supply of wood (more so than the supply of water) is seen as a specifically female occupation. In Iatmanène this job is so closely associated with females that some boys hesitate to fetch wood for fear of being treated as girls: it is curious that this strength of feeling exists, given that, from time to time, adult men carry out a significant portion of the work.

In Iatmanène and other villages in the area, grandfathers sometimes undertake woodfuel collection when children are at school. In other cases, the migrant head of household may collect wood and store it during a visit home. This is very different from practices in the Ißala in Tétouan where virtually no men are involved.

In Iatmanène 54 per cent of girls and 38 per cent of boys start collecting wood before they reach the age of 10. This is due to the fact that there is no local forest and dead branches, twigs and so on have to be collected in areas adjacent to the house. The supply of wood is not as vital to Iatmanène as it is to the other villages since the relatively higher standard of living here enables some households to have gas bread ovens. (Baking bread uses more wood than other household uses).

In Al Haoud, however, 58 per cent of girls and 50 per cent of boys start collecting wood rather later, between the ages of 10 and 14. Al Haoud is the only village where any fear is expressed for the safety of girls; here women take turns accompanying them to the forest.

8 FAMILY PLANNING
Attitudes to family planning, which differ quite markedly between the two areas, are a good index of the degree of openness of the two communities to the outside world.

In Iatmanène all households have heard of family planning, as opposed to 68 per cent of those in Al Haoud. Moreover, all households in Iatmanène are familiar with methods of contraception, as opposed to 58 per cent in Al Haoud. While a third of households in Iatmanène have used contraception in the past, none of the households in Al Haoud have. Currently, 44 per cent of Iatmanène households are using contraception, while none are in Al Haoud. There is even some evidence of daughter preference in Tétouan province attributable to the need for female labour, especially to fulfil woodfuel provisioning obligations.

In Iatmanène, there is a strong correlation between contraception usage and migration at the household level. Indeed, men bring back contraceptives for their wives (the pill is by far the preferred method) from abroad. The much higher level of education, particularly of girls, in Iatmanène is also conducive to greater familiarity with family planning and preparedness to practice contraception. There is an interesting paradox to note here. The seclusion of women in Iatmanène does not indicate their isolation from external cultural influences. Rather it reflects an improvement in social status of males, and a relief from arduous physical labour for women of which they are highly appreciative.

9 STATUS OF WOMEN
In the Rif, discrimination against girls starts at birth: the birth of a son is shouted out to neighbours and close kin, whilst the birth of a daughter passes almost unnoticed. Sometimes daughters are not even baptised. There is a clearly expressed preference for the male sex: 'Here in the Rif, we like boys.' Women tend to feel that they must have one or more sons. This increases their standing at the time of the birth and gives them a privileged status later on when their sons marry and, above all, if they emigrate. This status allows women to assert a great deal of power in the household and control over domestic decisions.

Girls are weaned up to two months later than boys both in Al Hoceima and Tétouan. Here we have discrimination in favour of girls, but it is inadvertent: it is felt that a mother's milk makes a child dull and slow and that boys should be protected from this.

In Iatmanène, girls who do not get married have difficulty adjusting to their position in a society where women only acquire social status when they become wives or mothers. As we have seen, marriage spares them the chores of collecting water and wood, because once married they are not supposed to go out. Yet ironically, marriage rates for the Iatmanène girls are plummeting. What is happening is that with male out-migration, women are losing local men to marriage with foreign women in the migrants' destination countries. In Iatmanène the trend towards non-marriage is currently causing a real crisis. Men's preferences have been justified in a
number of ways: they prefer to marry foreign women to help them get an emigration visa; they aspire to marry a town dweller because emigration has changed their cultural values; or, more generally, they have seen and experienced another world and they aspire to a different, better way of life. In short, it appears that young men want to marry girls who earn money. This has contributed to the feelings of inferiority internalized by unmarried latmanène girls:

‘Who is going to want me? I have to get married to survive, all I can do is sweep and make bread. (To the interviewer:) You have an education, you can earn your own living.’

We feel that this is the most fundamental of the changes taking place. In the Rif the ideology of gender relations was always to seclude women as and when the necessary socioeconomic status had been achieved. Those men whose wives do nothing but domestic tasks consider themselves to have ‘arrived’ socially. This is even apparent from their houses. They are distant from each other, particularly in one village (Tamassint) where each household occupies the top of a hill and finds a way of shielding itself so that neighbours cannot see what is going on in their home.

We have also remarked on the intergenerational and intergender shifts in the division of labour that have ensued in this case. With the seclusion of married women, children (especially girls), prime age and even elderly men, all take on extra work. The use in some households of gas ovens is the only labour-saving factor in the situation. If the future education of girls is to be increased, a policy of encouraging greater use of gas in cooking may need to be considered.

By contrast, in Tétouan, prime age adult women continue to bear most of the burden of water and (especially) woodfuel collection, although girls from the age of seven are required to work on their own (in small groups) or alongside their mothers in the extremely time consuming and heavy work of collecting woodfuel from the forest. Here too, then, there is an important reallocation of workloads between the generations, but among women only, because men are not taking up any of the load. Household incomes are not sufficient here to support purchase of alternative fuels to reduce that burden of work. In these circumstances, policies to introduce education for girls or to promote family planning are both likely to meet strong resistance. Environmental interventions which serve to improve woodfuel availability and reduce women’s workloads should be considered, given the apparent rigidity in the gender division of labour, or the inequity in the division of labour itself should be addressed as a social problem and an obstacle to sustainable development.