



UNITED NATIONS  
*Office on Drugs and Crime*

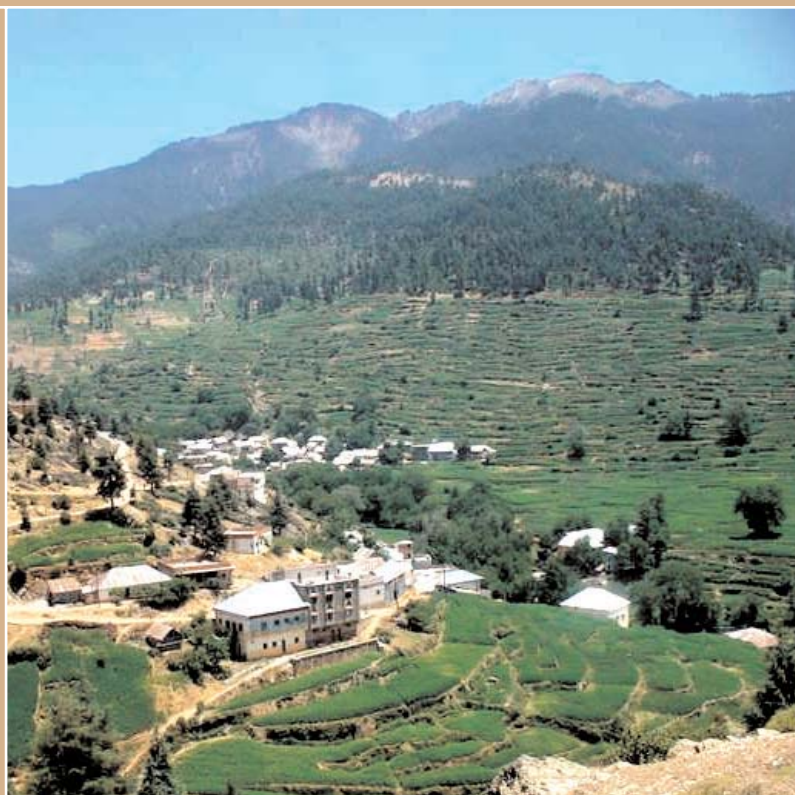
ROYAUME DU MAROC  
LE PREMIER MINISTRE  
AGENCE POUR LA PROMOTION ET  
LE DEVELOPPEMENT  
ECONOMIQUE ET SOCIAL DES  
PREFECTURES ET PROVINCES DU  
NORD DU ROYAUME



# MOROCCO

## CANNABIS SURVEY 2003

### EXECUTIVE SUMMARY



**DECEMBER 2003**

## Abbreviations

APDN	Agence pour la Promotion et le Développement Economique et Social des Préfectures et Provinces du Nord du Royaume
DPAE	Direction de la Programmation et des Affaires Economiques du Ministère de l'Agriculture, du Développement Rural et des Eaux et Forêts
CRTS	Centre Royal de Télédétection Spatiale
ICMP	Illicit Crop Monitoring Programme
UNODC	United Nations <i>Office on Drugs and Crime</i>
GPS	Global Positioning System
Dh	Moroccan Dirham

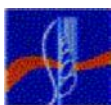
## Acknowledgments

The following institutions and individuals contributed to the implementation of this survey and to the preparation of the present report:

### Government of Morocco



**APDN:**  
Direction des affaires Administratives et Financières  
Département des Secteurs Productifs



**DPAE:**  
Division des Statistiques et de l'Informatique  
Service des Echantillonnages  
Service des Enquêtes



**CRTS:**  
Service de Cartographie Spatiale et Aménagement du Territoire

The implementation of this survey would not have been possible without the support of the local administration of the prefectures and Northern provinces of the Kingdom and the dedicated work of the DPAE field surveyors.

### UNODC :

- Xavier Bouan, Project Coordinator, UNODC - Rabat
- Amina Mouline, Project Assistant, UNODC-Rabat
- Hakan Demirbüken, Remote Sensing Analyst (ICMP)
- Thibault le Pichon, Manager (ICMP)
- Kenza Afsahi, Intern (CNRS PhD student, Science and Technology of Lille University)

The implementation of this survey was made possible thanks to financial contributions from the Governments of Morocco and Italy.

This report, and other ICMP survey reports can be downloaded from:  
[www.unodc.org/unodc/en/crop\\_monitoring.html](http://www.unodc.org/unodc/en/crop_monitoring.html)

**MOROCCO  
CANNABIS SURVEY 2003**

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## PREFACE

The project on a cannabis cultivation survey just completed by the Agency, supported by a number of departments from the Moroccan Administration, and in collaboration with the United Nations Office on Drugs and Crime (UNODC), constitutes a good example of international cooperation. Various reasons support this assessment:

- First of all, the initial objective was achieved: through a scientific and objective methodology, an exact picture of the extent of cannabis cultivation in the northern Provinces is now at our disposal. The scientific rigour adhered to in the present document will henceforth enable us to avoid uncertainties on the subject.
- Through this work, it was clearly established that any approach to fight illicit cultivation cannot be conceived at the level of one country only. The problematic is much larger and concerns both the producing and the consuming countries where important markets exist and where considerable financial flows are at stake. The size of the cultivation area revealed by the present report is evidence of the international importance of the phenomenon. It is indeed a global cannabis market. Our country is therefore afflicted by an activity which is detrimental to its development and whose factors of expansion are largely out of its control.
- This gives the Agency an occasion, therefore, to thank the UNODC as well as the departments of the Moroccan Administration as a whole for the spirit of professionalism and transparency which they have demonstrated throughout the implementation process. In this respect, the Agency wishes to perpetuate this spirit of cooperation and to use the results of this survey to go beyond a simple situation assessment, with a view to approach serenely the substance of the problem, through the promising approach of alternative development in particular. Here also, given the magnitude of the material and financial resources to be mobilized, international cooperation will of course be welcome. This type of cooperation was used in the course of the present study and it will have to be used for future actions as well.

In conclusion, the Agency is very pleased to have joined forces with UNODC to implement this project and declares its intention to continue this cooperation with UNODC as well as with other organizations of the international community.



Driss BENHIMA  
General Director

Agency for the Promotion and the Economic and Social Development  
of the Northern Prefectures and Provinces of the Kingdom

## PREFACE

During the last thirty years, the combined effect of three main historical factors have turned the Rif region, in Northern Morocco, into an important center of cannabis production:

- the ancient, but originally limited, presence of cannabis;
- the tremendous difficulties faced by a mountainous, poor and densely populated region in meeting the challenges of development in an unfavorable economic context;
- the spectacular expansion of drug consumption in general, and of cannabis in particular, in the European countries as of the 1970's.

This first survey launched by the Government of Morocco and the United Nations *Office on Drugs and Crime* (UNODC) made it possible to measure the size of the phenomenon:

- a quarter of the agricultural land in the Rif region is now occupied by an expanding cannabis cultivation;
- half of the low annual income of 800,000 people, or two-thirds of the rural population in that region, is now dependent on this activity;
- a fragile ecosystem is, and more so every year, threatened by deforestation and soil erosion;
- and an annual market of 10 billion Euros is in the hands of the trafficking networks operating mostly in Europe.

These numbers help us to assess the scale of the situation that confronts us today. Through its expansion, cannabis production threatens the environment of the Rif, risks to corrupt its social and economic structure and to compromise any prospects of sustainable development there.

The Moroccan Government is the first concerned. In this respect, I want to pay tribute to the determination and spirit of transparency shown by the Moroccan authorities in launching this survey and in associating the international community to it, through UNODC. However, the problem of cannabis production in Morocco and of the cross-border illicit economy which it feeds have international dimensions. Those dimensions give its full meaning to the concept of "shared responsibility".

The international community – multilateral organizations, countries of production, trafficking and consumption together – must take this shared responsibility, and decide to tackle the problem with a determination and spirit of cooperation commensurate with those of the government of Morocco. UNODC stands ready to play its role to encourage and facilitate this common undertaking.



Antonio Maria Costa  
Executive Director

United Nations *Office on Drugs and Crime*

# Morocco - Northern Provinces: Relief Map

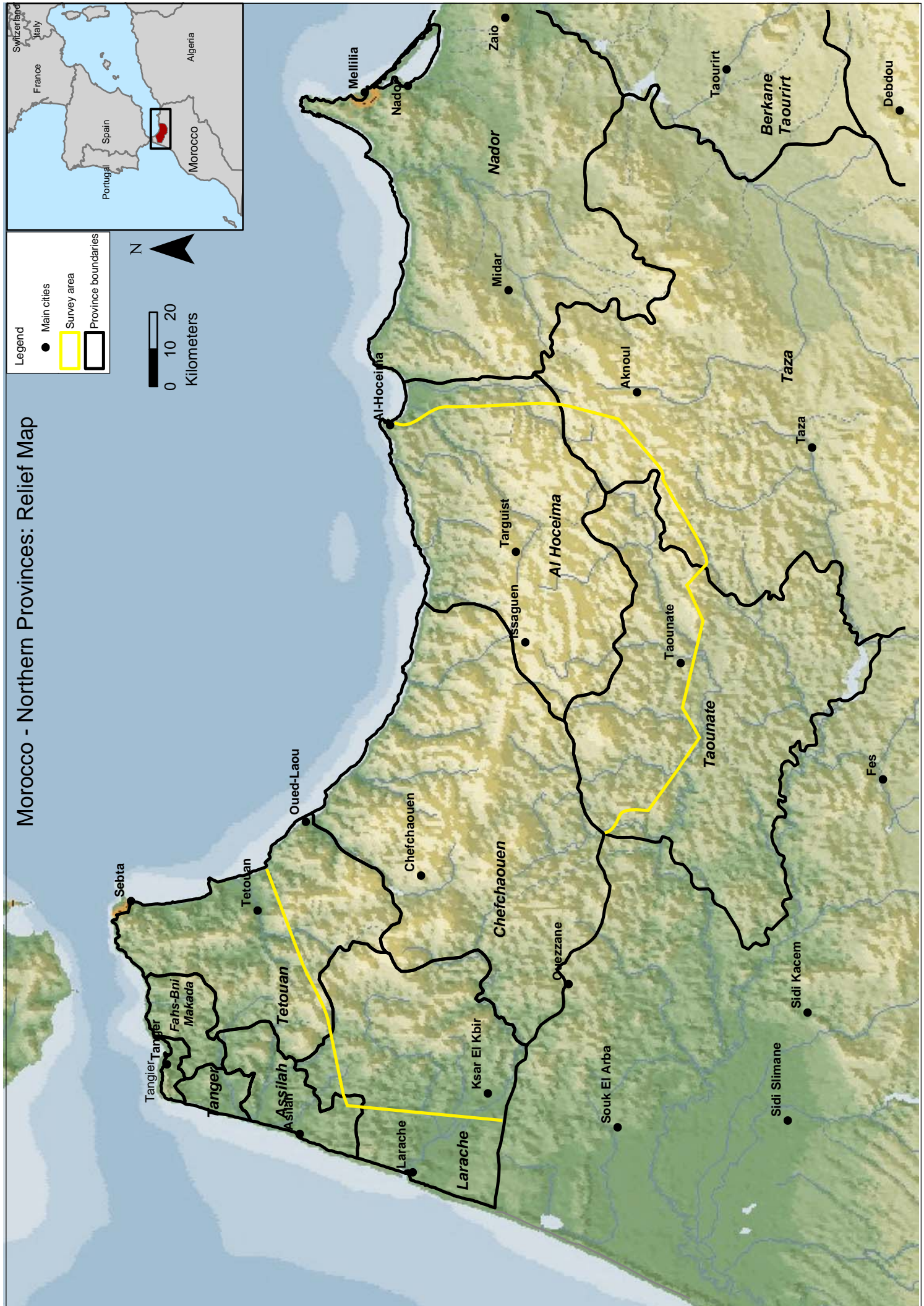


**Legend**

- Main cities
- ▭ Survey area
- ▭ Province boundaries

0 10 20  
Kilometers

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# EXECUTIVE SUMMARY

## FACT SHEET

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- Cannabis cultivation: **134,000 ha** (of which 12% on irrigated land)
- Gross cannabis production: **47,400 metric tons**
- Potential resin production: **3,080 metric tons**
- Number of households cultivating cannabis: **96,600 households** (66 % of the 146,000 rural households in the study area and 6.5 % of the 1,496,000 agricultural households in Morocco)
- Total population involved in cannabis cultivation: **800,000 people** (2.7 % of the country's population of 29.6 million in 2002)
- Cannabis cultivation in % of the total arable land in the study area: **27 %** (and 1.5 % of the 8.7 million of ha of arable land in Morocco)
- Total farmers' income from cannabis: **Dh 2 billion / US\$ 214 million<sup>1</sup>**
- Average annual household income from cannabis: **Dh 20,900 / US\$ 2,200** (out of a total annual household income of 41,335 Dh / US\$ 4 352, or 51%)
- Average cannabis income per capita: **Dh 2,536 / US\$ 267** (out of a total annual income per capita of 4,970 Dh / US\$ 523). (2002 GDP per capita: Dh 13,445 / US\$ 1,260<sup>2</sup>)
- In % of 2002 Moroccan GDP : **0,57 %** (with a GDP of US\$ 37,3 billion)
- 2002 seizure of cannabis resin: **735 mt** in Western Europe (<sup>3</sup>/<sub>4</sub> in Spain)  
**66 mt** in Morocco
- Annual turn-over<sup>3</sup> of international trade in cannabis resin: **€ 10 billion** (equivalent to Dh 114 billion or about US\$ 12 billion)

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1 1 US\$ = Dh 9.5 at the time of survey in 2003

2 1 US\$ = Dh 10.65 Dh in 2002

3 Most of this turn-over is generated by trafficking networks operating in European countries

Morocco has become one of the main producers of cannabis resin (hashish), supplying primarily the European market. The Northern Region of Morocco, where most of the cannabis cultivation is concentrated, is roughly 20,000 km<sup>2</sup> in size. Covering 5 provinces, it is crossed from East to West by the mountainous chain of the Rif, which culminates at 2,456 meters. This region is characterized by a rugged relief, important yet irregular rains and poor soils prone to erosion. The population density (124 inhabitant/km<sup>2</sup>) is three times higher than the national average (37 inhabitant/km<sup>2</sup>). In the past twenty years, cannabis cultivation has spread from the traditional areas in the central Rif, where it had been grown since the fifteenth century, to new areas. This expansion is often done at the expense of forested areas, as well as of the better arable and irrigated land, thus contributing to soil erosion and disappearance of licit agriculture.

The information available so far pointed to an increase in cannabis cultivation since the 1980's, but estimates of the actual size of the area under cannabis cultivation and of the production of hashish in Morocco were a debated and, at times, controversial subject. The Moroccan government decided to remedy the situation and signed a cooperation agreement with UNODC in February 2003 to conduct a survey on illicit drug production (cannabis) and organized crime in Morocco. The first survey on cannabis production was launched in July 2003. This document presents the results.

## Findings

### 1 . Cannabis cultivation

The survey estimated cannabis cultivation at about 134,000 hectares on the total area (14,000km<sup>2</sup>) covered by the survey in the five provinces concerned. This represents 10% of the total area and 27% of the arable lands of the surveyed territory, and 1.5% of Morocco's total arable land (8.7 million ha). 86% of the cannabis was cultivated in the three provinces of Chefchaouen (50%), Taounate (19%) and Al Hoceima (17%). The provinces of Larache (9%) and Tetouan (5%) only played a secondary role in cannabis cultivation. No cultivation was found in the province of Taza.

### 2. Cannabis production

The total potential production of raw cannabis was estimated at around 47,000 metric tons, 43 % of which was produced by Chefchaouen province alone. Al Hoceima province came second, with 25%, Taounate province third with 21% and Larache (7%) and Tetouan (4%) respectively fourth and fifth.

### 3. Cannabis resin production (hashish)

The potential cannabis resin production was estimated at 3,080 metric tons.

### 4. Cannabis producers

In the cannabis production area, 75% of the douars (villages) and 96,600 farms were found to produce cannabis in 2003. This amounted to 66% of the total number of farms in the surveyed area (147,000 farms) and 6.5 % of the total number of farms in Morocco (1,496,000). These 96,600 farms represented a total population of about 800,000 persons (the 1994 census gave a figure of 1.65 million for the rural population in the area), i.e. 2.5% of Morocco's total population, estimated at 29.6 million in 2002.



## 5 . Cannabis producers' revenues

Farmers cultivated on average 1.3 hectare of non-irrigated cannabis and 0.3 hectare of irrigated cannabis. Financially, non-irrigated fields cultivated in cannabis generated seven to eight times more revenues than those cultivated in barley, and twelve to sixteen times more when they were irrigated.

Sold for 66% in raw form and for 34% transformed into powder form, cannabis production enabled the producers to raise a total revenue of approximately Dh 2 billion, i.e. US\$ 214 million, in 2003. This amount represents 0.57% of Morocco's 2002 Gross Domestic Product (GDP), estimated at Dh 398 billion (US\$ 37.3 billion).

The average income per family generated by cannabis was estimated at Dh 20,900 (US\$ 2,200) and represented on average half (51%) of the total annual income (Dh 41,335, US\$ 4,351) of a cannabis producing family in 2003. By comparison, the average annual income of the 1,496,000 farms in Morocco was Dh 42,874 (US\$ 4,513) i.e. more or less similar to the annual income of a cannabis producing family.

The total income per capita generated by cannabis was estimated at Dh 2,237 (US\$ 267) for a total annual income of Dh 4,970 (US\$ 523). In comparison, the GDP per capita was about Dh 12,000 (US\$ 1,260) in Morocco in 2002.

## 6. Trafficking and overall turnover of the market of cannabis resin (hashish) of Moroccan origin

In 2001, cannabis resin seizures by the Moroccan authorities (61,35 metric tons) came in third place, after Spain's and Pakistan's, and represented 7% of the total cannabis resin seizures in the world. The fact that Spain came first (57% of the world seizures and 75% of the European seizures in 2001) is evidence of the importance of the Spanish territory as a transit zone for Moroccan hashish sold on the European market.

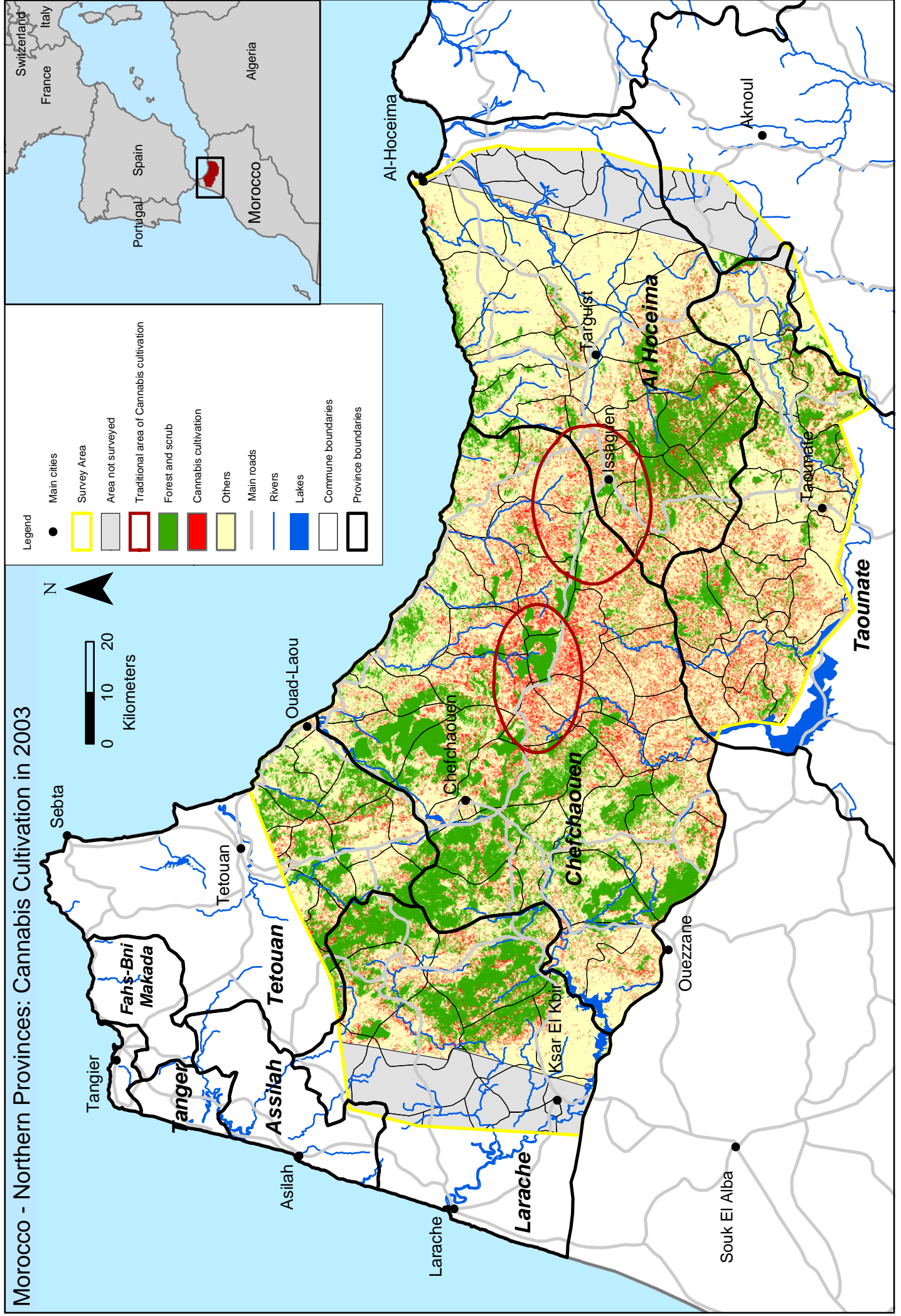
In 2002, around 735 mt of cannabis resins were seized in western Europe and 66 mt in Morocco (801 mt in total). Assuming that the same amount of cannabis resin would be seized in 2003, around 2,300 metric tons would be left from the 2003 Moroccan cannabis resin production for consumption. Based on an average retail price of US\$ 5.4 per gram in Western Europe in 2003, the total market turnover of Moroccan cannabis resin could be estimated at US\$ 12 billion (i.e. Dh 114 billion, or € 10 billion). Most of this turn-over is generated by the trafficking networks operating in the European markets. These estimates are to be taken with caution.

## Conclusion

The amount of cannabis cultivation in 2003 suggests an increase in the past few years, which is often detrimental to other agricultural activities, to the point that it became a cash crop. This phenomenon of monoculture is extremely dangerous for the ecosystem, especially because the farmers are making an extensive use of fertilizers and overexploit the soil. Moreover, forested areas, which are one of the specificities of the Rif area, are destroyed every year to accommodate new cannabis fields, thus accelerating soil erosion.

Morocco is one of the main producers of cannabis and the main exporter of cannabis resin to Europe. A link can be established between the cannabis production and the relatively low level of socioeconomic development in the production area. However, it is important to note that there are disparities between provinces, as well as between districts and villages. In some areas, cannabis is not necessarily, or not exclusively a mean of survival or a consequence of under-development. Social and cultural factors probably contribute as well to the development of the cannabis economy in the northern provinces of Morocco. These factors must also be taken into account when defining a strategy for the socioeconomic development of these regions without cannabis.

# Morocco - Northern Provinces: Cannabis Cultivation in 2003







# Morocco - Northern Provinces: Number of Households Cultivating Cannabis in 2003

