

Value addition of Moroccan date by developing Distinctive Signs of Origin and Quality: Case of Protected Geographical Indication, Protected Origin Appellation and Agricultural Label

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Introduction

Strengthening the relations between people, producing areas, agricultural and food products is an important pathway to sustainable rural development. These relations benefit from the local capacities for creating value within a global market while being anchored in a specific *terroir*. Origin-based products show specific quality attributes linked to the geographical places where they are produced and, over time, build a reputation by Distinctive Signs of Origin and Quality (known in Morocco by SDOQ from French: *Signes Distinctifs d'Origine et de Qualité*) that identifies them. These differentiated products have the opportunity to meet a specific and remunerating demand. Consumers are increasingly concerned with specific attributes of agricultural and food products, in relation to culture, identity, and sustainable ways of production. Moreover, such products are potentially contributing to biodiversity, world cultural heritage preservation, socio-cultural development and rural poverty reduction.

The identity of SDOQ products reflects the unique combination of local natural resources (climate, soils, local breeds and plant varieties, traditional equipments, etc.) and cultural ones (traditions, know-how and skills, some of which are transmitted through generations) in a given *terroir*, linking the product, the people and the place.

In Morocco, local products represent an economic and social issue, as the country is renowned for the richness and variety of its agricultural and food products. These products are also the result of their natural environment, traditional farming practices and culinary art developed by the population through the centuries. They therefore constitute an essential part of the cultural identity of populations and their lifestyle.

Nevertheless, market globalization and new technologies may endanger the specificities of traditional farming systems and processing techniques. In addition, a SDOQ product's reputation and value is often attractive for imitators, usurpers and free riders, both inside and outside the original production area. Misleading practices mainly touch the use of the name of the product and/or, in some cases, specific characteristics of the product.

Then the SDOQ, which is a collective system accessible to producers and manufacturers of agricultural and food products with a specific quality, can be recognized by public authorities and protected under intellectual property right. Producers and manufacturers may decide to apply for registration, according to the legal and institutional framework of the country. As such, the use of a SDOQ requires a formal identification of authorized users allowing the recognition, protection and value addition of local products.

1. Moroccan law on Distinctive Signs of Origin and Quality

The Moroccan law on SDOQ, established by the Ministry of Agriculture and Marine Fisheries, was registered under No. 25-06, promulgated by Dahir No. 1.08.56 of May 2008 and published in Official Bulletin No. 5640 of June 2008. It has two application Decrees: Decree No. 2-08-403 of December 2008 concerning SDOQ of food and agricultural and fisheries products and Decree No. 2-08-404 of December 2008 concerning the composition and mode of functioning of the National Commission of SDOQ. This law is part of a vision of rural development by providing additional income for small farmers, promotion of products quality and consumer protection.

Thus, the SDOQ law No. 25-06 has four objectives:

- Preserving the diversity of agricultural, food and fishery products and protecting the cultural heritage that they are linked by the recognition and valorisation of their origin, characteristics and methods of production;
- Promoting agricultural development through valorisation of characteristics linked to *terroir* as well as their production method and human know-how relating thereto;
- Increasing the quality of products and improving the income generated by their valorisation to the benefit of local operators;
- Strengthening consumer information.

2. Labels of Distinctive Signs of Origin and Quality

The main labels of SDOQ are: Protected Geographical Indication (PGI), Protected Appellation of Origin (PAO) and Agricultural Label (AL) allowing the identification, and most importantly, the certification of the origin and method of manufacturing. These signs are defined as follows:

- *Protected Geographical Indication*: The name used to identify a product as originating in a *terroir*, region or locality, where a given quality, reputation or other characteristics of the product can be essentially attributable to its geographical origin and which production and/or processing and/or preparation of this product take place in the defined geographical area.



- *Protected Origin Appellation*: The geographical name of a region, specific place or, in exceptional cases, country, used to designate a product originating therein, which the quality, reputation or other characteristics are due exclusively or essentially to the geographical area, including human and natural factors, and which the production, processing and preparation take place in the defined geographical area.



- *Agricultural Label*: The recognition that a product has a set of qualities and specific characteristics and therefore has a high level of quality higher than that of similar products in particular because of the production and manufacturing conditions, where appropriate, its geographical origin.

3. Application for recognition of a Distinctive Sign of Origin and Quality

The recognition of a SDOQ in Morocco is an institutionalized and well-defined process from the presentation to the Ministry of Agriculture, by the applicant group, of application for recognition of a SDOQ to the recognition by the Ministry of Agriculture of the applied sign.

Any application for recognition of a SDOQ is subject to the following procedure:

- i* The applicant (producers group, local community, public administration or establishment) defines its SDOQ project in a detailed and precise Code of Practices.
- ii* The application for SDOQ recognition including the project of code of practices and application form prepared in accordance with the law No. 25-06 is submitted to the Ministry of Agriculture.
- iii* After verifying the compliance of the application by the Ministry of Agriculture, the National Commission of SDOQ reviews the code of practices and gives his opinion on SDOQ approval. Taking into account the opinion of the National Commission, the Ministry of Agriculture decides to grant or not the SDOQ to applicant(s) and notifies the decision to the applicant(s).

The Code of Practice (CoP) is a document establishing the rules for the use of a SDOQ. Its elaboration is a very important step, leading to the specifications with which local producers who want to use the SDOQ have to comply. According to the law No. 25-06, the CoP of SDOQ must include 11 paragraphs:

- 1** *Name of the product*
- 2** *Definition of the geographical area:*
Description of the limited area. When needed, distinction between the production area of the raw material and the production area for processing and conditioning.
- 3** *Elements proving that the product originates in the geographical area concerned*
- 4** *Elements justifying the link between the quality and characteristics of the product and the geographical area:*
Focus on the elements justifying the link between the specific quality and the resources in the geographical area (natural and human ones)
- 5** *Description of the product:*
The main physical, chemical, microbiological or organoleptic characteristics of the product, focusing on features that are easily assessable.
- 6** *Definition of the method for obtaining the product:*
The method for obtaining the SDOQ product in all the phases of the production process (agricultural production, transport, processing, conditioning and including final packaging). If needed, insert explicit prohibition for using some production methods. Focus on relevant phases and aspects.

7 *Certification and control body*

8 *Specific elements of identification related to labeling*

9 *Stakeholders engagement*

10 *Control plan*

Verification system which must be followed by the control and certification body. It contains the description how the controls will be used.

11 *Sanitary requirements*

4. Distinctive Signs of Origin and Quality of dates

Date fruits produced by palm trees anchored in specific *terroir* represent an economic and social issue. They are the result of their natural environment and traditional farming practices developed through the centuries. Local product par excellence, dates are currently enjoying a great interest at the national level, from the administration, research and profession for the development of SDOQ, especially in the context of the Green Morocco Plan (Plan Maroc Vert) which is the Moroccan Government Agricultural Development Strategy.

The establishment of the Dates SDOQ will allow the legal protection of the cultivar name for restricting the usurpation of the name and reducing the risk of infringing its quality, image, reputation and authenticity. It also will allow recognition of the long tradition of producing the given cultivar in the defined geographical area and generation of an added value of dates by improving their competitiveness in the domestic market and their emergence on the international market. This date's valorisation will contribute to improving incomes of the population.

Four Moroccan date cultivars were already benefited from SDOQ:

- i. *Geographical Indication "Dates Mejhoul of Tafilalet"*
- ii. *Geographical Indication "Dates Aziza of Figuig"*
- iii. *Geographical Indication "Dates Boufeggous"*
- iv. *Geographical Indication "Dates Bouittob of Tata"*

Two other SDOQ-dates are under evaluation by the National Commission of SDOQ: Geographical Indication "*Dates Jihel of Draa*" and Agricultural Label "*Dates Najda*". In addition, research studies currently concern the determination of typicity and quality of Outoukdim and Black Bousthammi dates to finalize the application for GI "*Dates Outoukdim of Todgha*" and GI "*Dates Black Bousthammi of Draa*" in concordance with the SDOQ law No. 25-06.

Below are presented some elements of CoP of GI "*Dates Bouittob of Tata*":

1) Name of the product

The product for which is requested the Geographical Indication (GI) is called (Figure 1):

"*Dates Bouittob of Tata*": "تمور بويطوب طاطا"



Figure 1. *Geographical Indication "Dates Bouittob of Tata".*

The choice of cultivar *Bouittob* of Tata oases for the development of the GI is based on reputation and quality of the dates of this cultivar, the particular geographical situation of Tata oases, their rich histories, the importance of these oases at the national level in the production of dates (third place) and the interest of their farmers for the establishment of dates SDOQ.

The applicant group of GI "*Dates Bouittob of Tata*" is the Agricultural Cooperative Taskala (COTAS) based in Akka (Tata province). This cooperative, established in 1998, is among the active groups in the province of Tata operating in the sector of production and packaging of dates. The members of the cooperative showed a high availability and a strong interest in the development of the GI "*Dates Bouittob of Tata*".

2) Definition of the geographical area of GI "Dates Bouittob of Tata"

The cultivar *Bouittob* selected in oases of Tata province is located within three circles of the province (Foum Zguid, Tata and Akka). Its geographical area is defined as follows (Figure 2):

- In the North: There are rural communes Tagmoute and Issafen and provinces Taroudante and Ouarzazete;
- In the West: There are the rural commune of Tizaghte and provinces Tiznit and Guelmim;
- In the East: There are the province Zagora and the Algerian-Moroccan border;
- In the South: There are the province Assa-Zag and the Algerian-Moroccan border.

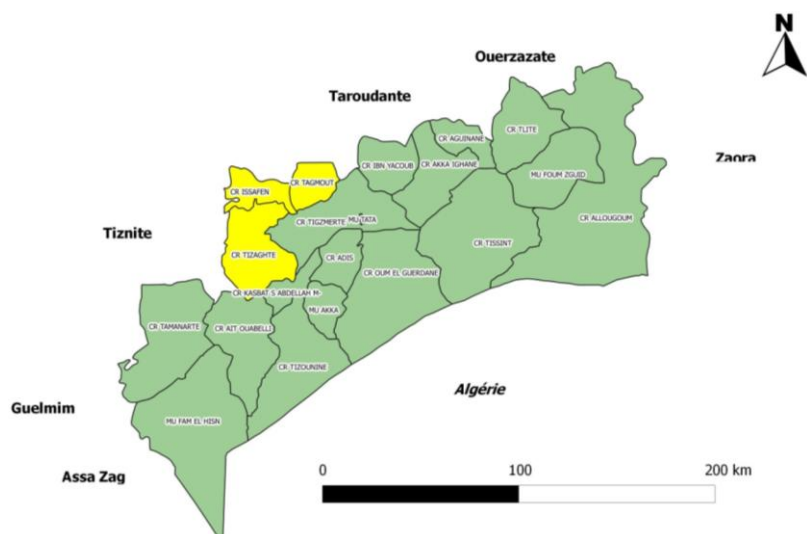


Figure 2. Map of Tata province showing in green the geographical area of Geographical Indication "Dates Bouittob of Tata".

3) Elements proving that the product originates in the geographical area concerned

Tata oases were known for their dates production which made the fortune of these oases. The dates produced in Tata have an exceptional quality and the fruits of some cultivars were reputed. The cultivar *Bouittob* was considered among the best date cultivars of Tata oases. It was also considered the date of the wealthy class of the Tata oases. Therefore, this social factor has limited the propagation on a large scale of cultivar *Bouittob* in the oases of Tata and prevented its migration to other Moroccan oases. Thus, *Bouittob* is a specific cultivar of Tata region for its existence only in the limited geographical area.

Concerning the historical presence of the cultivar *Bouittob* in Tata oases, it was indicated that this cultivar is present in Tata oases for about five (5) centuries. As in the past, dates of cultivar *Bouittob* always enjoy a great reputation for their high organoleptic quality.

4) Elements justifying the link between the quality and characteristics of the product and the geographical area (Specificities of oases Tata)

Dates *Bouittob* are exclusively produced in oases of Tata. The specificities of the GI "*Dates Bouittob of Tata*" are mainly due to the particular characteristics of this geographical area. Indeed, these oases have certain originality by comparison to other oasis areas. They offer a combination of mountains, desert, huge palm groves, ksours and rustic sites, the oldest in Morocco. They are regarded as a passageway to the Sahara and Souss region by multiple valleys and couloirs of the Anti-Atlas and Bani mountains. The main geographic factors including geological, edaphic, climatic and hydric contribute to the establishment of the quality and the typicity of the GI "*Dates Bouittob of Tata*" by manifesting in particular on the weight and size criteria, water content, ash content, mineral content and the concentration of compounds responsible for the taste and flavor including sugars and aroma compounds.

5) Description of the GI "*Dates Bouittob of Tata*"

About sixty quality criteria including sensory criteria and morphological, physical, physico-chemical and biochemical criteria of dates *Bouittob* have been studied by National Agricultural Research Institute in Marrakesh (weight criteria, dimension criteria, importance of the pulp, quality index, Brix, pH, acidity, sugars content, proteins content, ash, minerals, cellulose content, aroma compounds, etc.). Considering these criteria, GI "*Dates Bouittob of Tata*" are very typical (Figure 3), which give them notoriety among other Moroccan dates generally and dates of Tata oases in particular.

Concerning the main weight and dimensions criteria of dates *Bouittob*, they are as follows:

- The caliber of dates *Bouittob* is qualified large according to Codex STAN 143-1985 standard. Indeed, the average number of fruits contained in 500 g is less than 80. The maximum number of fruits per kilogram adopted for the GI "*Dates Bouittob of Tata*" is that proposed for Class Extra, Class I and Class II by the Moroccan specific standard of cultivar *Bouittob* (163, 239 and 333 respectively).



Figure 3. Dates and seeds of cultivar *Bouittob*.

- The weight of dates *Bouittob* varies from 3.3 to 10.4 g (on average 5.6 g). The weight of the pulp varies from 2.7 to 9.1 g (on average 6.5 g). The pulp content evaluated by the ratio of pulp and date weights varies from 74.8 to 96.2% (on average 86.6%), qualifying the pulp as abundant.
- The length, width and thickness of the pulp of dates *Bouittob* vary respectively from 22.0 to 38.8 mm, from 11.8 to 22.3 mm and from 2.2 to 6.4 mm.
- The calyx is moderately adhering to the date (on average about 39% of fruits retain their calyxes after harvest).
- The average weight of the seed of dates *Bouittob* is 0.9 g. Brown and beige, this seed is characterized by the presence of longitudinal stripes. The position of the germinative pore is predominantly central and the ventral furrow is opened.

The main physico-chemical and biochemical criteria of dates *Bouittob* are:

- The humidity varies from 8.1 to 18.3 g/100 g of fresh matter (FM). The average value of humidity is 12.2 g/100 g of FM.
- The content of total sugars, containing exclusively invert sugars represented by glucose and fructose, is averaging 77.3 g/100 g of dry matter (DM). The minimum and maximum contents of total sugars are respectively 72.0 and 84.0 g/100 g DM. Minimal sucrose contents, on the order of 2 g/100 g DM, can be contained in dates *Bouittob*.

Concerning the main sensory criteria, dates *Bouittob* are characterized by a yellow-brown to brown color, an oval shape, rough skin and a semi-soft texture. In addition, dates *Bouittob* are mainly characterized by a fruity, floral and caramel odor. They are also characterized by a very sweet flavor. The flavors predominantly detected are fruity, honey, caramel and licorice.

6) Definition of the method for obtaining the product

A special interest, while respecting the local know-how, will be given to the GI "*Dates Bouittob of Tata*" from the palm groves to the market. Production, processing and packaging of these dates will be conducted in the geographical area.

Overall, pre-harvest production techniques of GI "*Dates Bouittob of Tata*" are based on know-how of farmers. In fact, except for irrigation, other cultural practices necessary for proper conduct of the date palm (pruning, fertilization, pollination on optimum stage of female receptivity, plant protection, etc.) are not systematically applied by farmers of Tata. Thus, production techniques of dates to ensure high production both qualitatively and quantitatively

will be adopted by producers of dates *Bouittob* of Tata capable of acquiring the GI. Therefore, for a better quality of GI "*Dates Bouittob of Tata*", farmers are required to conduct a proper crop management.

For a better valorisation of the GI "*Dates Bouittob of Tata*" for the preservation of its intrinsic quality and improvement of its marketable quality, dates will be processed and packaged in valorisation units using a suitable process.

7) Certification and control body

The designated body for certification and control of the GI "*Dates Bouittob of Tata*" is NORMACERT.

8) Specific elements of identification related to labeling

The labeling of the GI "*Dates Bouittob of Tata*" will cover mandatory legal regulations and those specific to each conditioner supplemented by the following mentions related to GI:

- Name: *Protected Geographical Indication "Dates Bouittob of Tata"*;
- Logo of the GI, in accordance with Law No. 25-06 and the decree of application No. 2-08-403 of December 2008 on the use of the logo;
- Contact details of the certification and control body;
- Cultivar *Bouittob*.

9) Stakeholders engagement

The stakeholders involved in the production of GI "*Dates Bouittob of Tata*" undertake to comply with all requirements pre and post-harvest of code of practices to ensure, in scientific and professional manner, promising ways of valorisation of cultivar *Bouittob*, of its protection, but also how to integrate the competitive market internationally. The consumer will find a guarantee of traceability and product quality.

10) Control plan to be followed by the certification and control body

Any person involved in the production and/or packaging of the GI "*Dates Bouittob of Tata*" is committed to respecting the code of practices and to keep registers to facilitate the control and compliance of certification conditions of the product. Regarding the traceability of the GI "*Dates Bouittob of Tata*", it will be provided at various levels from production to commercialization.

11) Sanitary requirements

In addition to the requirements of origin and production of dates *Bouittob* of Tata, the beneficiary groups of the GI "*Dates Bouittob of Tata*" undertake to comply with sanitary requirements of hygiene and quality along the production and packaging chain. Thus, the dates concerned by the GI will be prepared and handled in accordance with the general principles of food hygiene.

Furthermore, dates *Bouittob* of Tata should have the appearance and flavor of the cultivar, have a sufficient degree of maturity, be free from living insects and must be healthy (not

containing stained dates, damaged dates, dates whose skin was crushed and / or torn, not pollinated, dirty or contaminated by insects and mites, fermented, moldy and rotten, etc.) in accordance with the Moroccan dates standard.

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