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Protecting Artistic and Artisanal Creativity from Generative AI in Developing Countries

A Legal Readiness Framework Based on the Moroccan Case and the "Digital Maâlem" Model

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Abstract

Generative models trained on global corpora reproduce the decorative and musical vocabulary of developing countries without consent, attribution or payment, and the artisans who authored those traditions bear the commercial consequence. This paper develops **legal readiness** as a qualitative conceptual and policy framework for assessing whether a national legal system can respond. The framework structures analysis across four policy axes: the protection of human authorship, training data governance, the safeguarding of folklore and traditional cultural expressions, and judicial capacity. It assigns no indicators, weights or scores to any jurisdiction.

The framework extends UNESCO's Readiness Assessment Methodology (RAM). Morocco has completed a RAM, but its published legal findings concern personal data, the regulation of cyberspace, liability and public procurement, not cultural intellectual property. No readiness instrument currently asks who may license a traditional cultural expression for machine training, what provenance obligations attach to heritage material in a training corpus, or whether a court can establish that a protected work entered a model. That is the gap this framework addresses.

Morocco is examined as an illustrative national case rather than a statistically representative sample of developing countries. Applying the four axes to Moroccan law returns a mixed result. Axis 3 is strong: Article 7 of Law No. 02-00 protects expressions of folklore against reproduction, communication to the public, adaptation and fixation for commercial purposes, vests the authorisation right in the Moroccan Copyright Office, requires that the community or locality of origin be named, and earmarks the sums collected for professional purposes and cultural development. Axis 4 is partial: Law No. 013.26 of 2026 empowers authorised officials to inspect the information systems of users of protected works, which is an evidentiary tool of direct relevance, though its reach to a training corpus held abroad is untested. Axis 2 is indirect. Axis 1 shows no readiness on the express question, since no Moroccan instrument distinguishes AI assisted from AI generated work, and the human authorship requirement that Law No. 013.26 preserves resolves the matter only by implication.

The paper then proposes the **Digital Maâlem** model, under which AI systems deployed in the artisanal and creative sectors operate under the responsibility of a certified master artisan, paired with a **professional digital twin** through which an artisan registers technique and draws a statutory remuneration when it is exploited commercially. Both components are anchored on institutions that already exist: the authorisation right of the Copyright Office under Article 7, and the artisan registers maintained by the regional chambers of crafts. Questions of consent, inheritance, attribution of diffuse communal style and cross border enforcement are set out as the conditions the model must satisfy before implementation, and the objections of state custodianship and cultural access are addressed directly. The conclusions are offered as foundational hypotheses and policy pathways for broader comparative research.

Keywords: legal readiness · traditional cultural expressions · generative AI · intellectual property · Morocco · Digital Maâlem · WIPO

1 Introduction

1.1 The problem

Large language and image models are trained on corpora assembled at global scale, and developing countries face what can be called an erosion of creative identity: the loss of practical sovereignty over cultural and artistic heritage that remains, formally, theirs.

Artistic works (paintings, music, texts) are used as training data without authorization or compensation, which threatens the livelihoods of local artists and cuts against the principle of equity in the UNESCO Recommendation on the Ethics of Artificial Intelligence.^[1] In the field of traditional crafts the mechanism is more direct. Decorative patterns, geometric compositions and artisanal techniques such as zellige, wood carving and weaving are absorbed into models and re emitted as inexpensive digital designs sold globally. The artisan who holds the tradition competes with a generated derivative of their own vocabulary, at a price no workshop can match.

That the algorithmic re use of Moroccan traditional repertoires is already operating, rather than merely foreseeable, is documented. One publicly available tool generates Moroccan zellige patterns on a generative algorithm built with p5.js, inviting users to explore the motifs, personalise them and create their own designs.^[23] A Moroccan visual arts project presented at the ICC Forum in Rabat in December 2024 frames AI driven creation as a fusion of tradition and technology for innovative and collaborative visual work.^[24] Both establish that the traditional repertoire is already an input to generative production in and about Morocco.

The narrower proposition, that this production is displacing artisanal income, is an inference rather than a documented finding, and this paper treats it as such. The evidence above establishes exposure. Whether exposure has become substitution is an empirical question, recorded among the limitations in Section 7.

This paper is grounded in the UNESCO Recommendation on the Ethics of Artificial Intelligence (2021),^[1] adopted by 193 Member States, and in the values of human rights, cultural diversity and environmental well being that the Recommendation carries.

1.2 Positioning: what this framework adds to readiness assessment

UNESCO's Readiness Assessment Methodology (RAM) translates the Recommendation into national action. It assesses a country's AI ecosystem across legal, social, economic, educational, scientific and technological dimensions, identifies governance and regulatory gaps, and produces a country

report with policy recommendations.^[2] More than seventy countries have implemented or are implementing it.

Morocco has completed a RAM, and its country profile and country report are published by UNESCO's Global AI Ethics and Governance Observatory.^[3] The profile identifies technological infrastructure as the most significant gap, notes the absence of an AI specific national strategy, and concludes that existing digital legal frameworks need readjustment, particularly for personal data, the regulation of cyberspace, liability and public procurement.^[3]

Readiness assessment therefore already includes a legal dimension, and the Moroccan assessment exercised it.^{[2][3]} As exercised, however, that dimension does not reach **cultural intellectual property**. None of its published findings addresses which body may authorise the computational use of a traditional cultural expression, what provenance obligations attach to heritage material inside a corpus, how a benefit returns to a community of origin, or what a court needs in order to find that a protected expression entered a model. These questions are legal in form and cultural in subject, and a general purpose legal assessment is not designed to ask them.

The contribution of this paper is therefore a **cultural intellectual property extension** of readiness assessment: four axes through which the legal dimension can be examined specifically for artistic and artisanal heritage, in jurisdictions where that heritage is a material part of the cultural economy.

1.3 Status and scope of this contribution

The four axes set out below are conceptual and qualitative. They structure policy analysis and legislative benchmarking. They are not a scored index, they carry no indicators or weights, and they rank no jurisdiction against another. Converting them into a measurement instrument would require methodological development beyond the scope of this paper, including item construction, calibration and inter rater reliability testing. What follows is best read as a conceptual and policy framework extending the RAM, together with a national institutional proposal, and not as a ready made assessment tool. Section 7 sets out the limitations of the contribution in full.

2 The Legal Readiness framework: four axes

2.1 Derivation of the axes

The four axes are not derived from a prior instrument and are not offered as an exhaustive partition of the field. They are stipulated for analytical convenience, on the following reason-

ing: each corresponds to one point in the chain along which an artisanal or artistic contribution travels into a generative model and back out as a commercial substitute. Authorship governs what the law recognises as a protectable contribution at the point of creation. Training data governance concerns the moment of ingestion. Folklore and traditional cultural expressions concern the material that no individual author holds. Judicial capacity concerns the point of enforcement, where every prior axis is either vindicated or made nominal. A jurisdiction can be strong at one point in that chain and inert at another, which is the analytical work the axes are meant to perform.

Table 1 records where each axis sits in relation to existing instruments, so that a reader can see what is extended and what is stipulated.

Axes 3 and 4 are where the framework claims its contribution. Alternative partitions, for example separating remedies and damages from judicial capacity, or adding an axis for benefit sharing institutions or for the access and public domain counterweight discussed in Section 5.2, are compatible with it.

2.2 Axis 1: Protection of human authorship

Most intellectual property statutes in developing countries rest on a traditional human authorship model and contain no express provision for works generated by computers or by artificial intelligence. The diagnostic question for this axis is therefore: **does the law distinguish clearly between an AI assisted work and an AI generated work, and does it allocate ownership in the second case?**

Two approaches are available as comparative anchors. The first is the “necessary arrangements” approach, under which authorship in a computer generated work vests in the person by whom the arrangements necessary for its creation were undertaken. This is the model of section 9(3) of the United Kingdom Copyright, Designs and Patents Act 1988,^[6] whose interpretive difficulties in the generative AI context have been analysed in detail,^[7] and of section 1(1)(h) of the South African Copyright Act 98 of 1978, which provides that in the case of a computer generated literary, dramatic, musical or artistic work, or computer program, the author is the person by whom the arrangements necessary for the making of the work were undertaken.^[5] The provision has been discussed in broader African policy analyses of the interaction between artificial intelligence and intellectual property.^[4] The second approach is a human in the loop test of the kind applied by the Beijing Internet Court, which recognised authorship where a user’s prompting and selection reflected demonstrable intellectual investment.^[8]

Neither approach is costless. The necessary arrangements route can vest authorship in a platform operator rather than a creator, which in the artisanal context would transfer the

benefit precisely away from the population this paper is concerned with. The intellectual investment route requires a court to assess creative contribution case by case, which presupposes the judicial capacity examined in Axis 4. A jurisdiction choosing between them is choosing where to place an institutional burden, not merely selecting a doctrine.

2.3 Axis 2: Training data governance

Where transparency and licensing mechanisms are absent, local cultural heritage can be used to train models with no record of its use. Three legislative requirements define readiness on this axis:

1. **Disclosure of data sources.** The European Union AI Act requires providers of general purpose AI models to draw up and make publicly available a sufficiently detailed summary of the content used for training.^[9] The obligation matters for developing countries because its territorial scope reaches providers placing models on the Union market irrespective of where they are established,^[9] which makes it one of the few existing levers that operates on model developers domiciled elsewhere.
2. **A text and data mining regime with a functioning opt out.** An exception without a practicable reservation mechanism is, for a rights holder without legal resources, indistinguishable from no protection at all.
3. **Fair compensation for the commercial use of national cultural heritage.**

Readiness on this axis is a question of whether these levers exist in national law, and of whether a domestic rights holder can actually operate them.

2.4 Axis 3: Protection of folklore and traditional cultural expressions

Most intellectual property statutes do not adequately protect folklore, which permits commercial exploitation with no return to the communities of origin. Where protection does exist, it typically takes the form of a statutory mandate granted to the state or to a representative body, commonly a copyright office, to administer licences over expressions of folklore and to collect fees. Readiness on this axis is a question of whether such a mandate exists, whether it extends to computational use, and whether the body holding it has the administrative capacity to exercise it.

This axis intersects directly with the normative work of the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC). The diplomatic conference of May 2024 concluded a treaty on genetic resources and associated traditional knowledge in the patent domain,^[12] and left the protection of tradi-

Table 1. Provenance of the four axes. (all four are stipulated by this framework)

Axis	Relation to readiness assessment	Related normative work	Status
1. Protection of human authorship	Within the RAM legal dimension; AI authorship not specified ^[2]	CDPA 1988 s. 9(3); ^[6] South African Copyright Act s. 1(1)(h); ^[5] Beijing Internet Court (2023) ^[8]	Comparative anchors available
2. Training data governance	Within the RAM legal dimension; heritage corpora not specified ^[2]	EU AI Act Arts. 2 and 53(1)(d) ^[9]	One binding regional model exists
3. Folklore and traditional cultural expressions	Not reached by the legal dimension as exercised ^[3]	WIPO IGC draft articles on TCEs; ^[11] 2005 UNESCO Convention ^[13]	Active international negotiation
4. Judicial capacity	Outside the scope of readiness assessment	No settled international instrument	Least developed of the four

tional cultural expressions to continuing text based negotiation. The Committee has developed draft articles on the protection of traditional cultural expressions addressing eligibility criteria, beneficiaries, protection measures, exceptions and limitations, and the relationship between traditional cultural expressions and existing intellectual property systems.^[11] Negotiation continued on that basis at the fifty second session, held in Geneva from 4 to 13 March 2026 under a renewed mandate.^[10] The subject matter in issue includes communal tangible and intangible artistic forms such as geometric patterns, motifs, handicrafts and musical heritage,^[11] which are the categories now systematically exposed to algorithmic extraction.

The framework finds an operational benchmark for this axis in Moroccan Law No. 02-00 on Copyright and Related Rights, discussed in Section 3.

2.5 Axis 4: Judicial capacity

Statutory rights that cannot be proved are nominal, and this axis is the least developed of the four in both scholarship and practice. Readiness here is not reducible to the existence of specialised cybercrime units, whose competence is directed at unauthorised access and network offences rather than at intellectual property in a computational setting. It requires four distinct capacities.

First, a **workable allocation of the burden of proof**. The claimant's difficulty in generative AI infringement is not showing similarity between an output and a tradition; it is showing that a specific protected work entered the training corpus. Where the corpus is undisclosed, that burden is unmeetable by a claimant acting alone, which is why the disclosure obligations of Axis 2 are an evidentiary provision as much as a transparency one.

Second, **disclosure and inspection mechanisms** capable of reaching a training dataset. A statutory power to inspect the information systems of those who exploit protected works, of the kind Morocco introduced in 2026 and discussed in Section 3.1, is the domestic half of this capacity. The harder half is reach to a dataset held abroad, which no national provision

supplies on its own.

Third, **an accurate understanding of what technical evidence establishes**. Watermarking and provenance marking speak to the origin of an output. They do not establish the composition of an input, and they are removable. A court that treats a watermark as proof that a protected work was used has mistaken one question for another.

Fourth, **access to expert evidence** that a claimant of ordinary means can afford.

3 Morocco as an illustrative case

Morocco is presented as an illustrative national case of a developing country modernising its legal framework in response to technological disruption. Whether its approach transfers to jurisdictions with different legal traditions and institutional capacities is addressed in Section 5.3.

3.1 Legal basis: Law No. 02-00 and its amendments

The foundational instrument is Law No. 02-00 on Copyright and Related Rights.^[14] Its Article 7, headed Protection of Expressions of Folklore, is the provision on which this paper's Axis 3 analysis rests, and its structure repays close reading.^[14]

Article 7(1) protects expressions of folklore against four categories of use where those uses have a commercial aim or lie outside the conventional or customary framework: reproduction; communication to the public by representation, performance, broadcasting, cable transmission or any other means; adaptation, translation or any other modification; and fixation. Article 7(2) excludes use by a natural person solely for personal reasons, short extracts for the reporting of current events, use solely for direct teaching or scientific research, and the cases in which a work may be used without authorisation under Chapter IV of Part I. Article 7(3) requires that, in printed publications and in any public communication of an identifiable expression of folklore, the source be indicated appropriately by naming the community or locality

from which the expression comes. Article 7(4) vests the right to authorise the acts in paragraph (1) in the Moroccan Copyright Office (Bureau Marocain du Droit d'Auteur et des Droits Voisins, BMDAV). Article 7(5) provides that sums received under the Article are allocated for professional purposes and to cultural development.

Four features of that architecture matter for what follows. The protected acts in paragraph (1) are drafted by reference to categories of use rather than to technologies, and reproduction, adaptation and fixation are each acts that a training pipeline performs. The commercial and outside customary context trigger tracks the distinction the framework needs, between practice within a tradition and exploitation of it from outside. Paragraph (3) already imposes an attribution duty running to a **community or locality**, which is the collective unit that individual copyright cannot address. And paragraph (5) already earmarks receipts for professional and cultural purposes, which supplies a distribution channel rather than general revenue. Sections 4 and 5 build on all four.

The framework was substantially reinforced by Law No. 34-05 of 2006, a reform directed at modernizing copyright protection and adapting it to technological development.^[15] In 2022 the legislator enacted Law No. 66-19, amending Law No. 02-00 and further strengthening the protection of digital content and folkloric expressions; it was promulgated by Dahir on 24 May 2022 and published in the *Bulletin Officiel* of 5 January 2023.^[16] The statutory basis of BMDAV itself is Law No. 25-19.^[17]

The operative consequence is that commercial use of expressions of folklore, notwithstanding their public domain status, requires prior authorisation from BMDAV and the payment of fees.^{[14][16]} This is not an inconsistency but an instance of the *domaine public payant*, a recognised construct under which material outside private copyright remains subject to an administered charge on commercial exploitation, collected by a public body for the benefit of the cultural sector. It is the doctrinal foundation on which the licensing proposals in this paper rest.

The provision supplies a legal basis on which fees can be imposed on AI developers using Moroccan cultural heritage as training data, including ornamentation, Amazigh music, geometric patterns and Malhoun art, and extends to traditional craft designs such as zellige, engraving and weaving, the category most exposed to generated substitutes.

Most recently, Law No. 013.26 amending and supplementing Law No. 02-00 was promulgated by Dahir on 28 July 2026 and published in the *Bulletin Officiel* of 10 August 2026.^[18] Its content requires precise statement, because it bears on two axes in opposite directions.

The Law does not expressly address AI generated works or authorship in relation to artificial intelligence. It maintains the foundational requirement that a protected work be an

original creation of a natural person, which resolves the status of a purely machine generated output only by implication and leaves the AI assisted case unaddressed.^[18] To that extent it does not advance Axis 1. It does, however, introduce two provisions of direct relevance to Axis 4. Article 1(33) defines piracy as any exploitation, unauthorised under the Law, of a work, performance, sound recording or audiovisual recording, **by any means whatsoever, including digital means or via the Internet**. Article 2(60) authorises designated officials recording violations to access and inspect premises, locations, **information systems** and means of transport, in particular those belonging to users of literary and artistic works protected under the Law.^[18] An inspection power over the information systems of those who exploit protected works is an evidentiary instrument of exactly the kind Axis 4 requires, and its existence distinguishes Morocco from jurisdictions whose folklore provisions have no enforcement apparatus behind them.

Two observations follow. Recency of amendment is evidence of legislative capacity, not of substantive coverage: Morocco has amended its copyright law three times since 2006 without addressing AI authorship. And in the absence of AI specific provisions, the application of the Law to generative systems remains governed by general copyright principles, a position of default rather than of design.

3.2 Institutional infrastructure: the BMDAV reprography portal

In 2026 BMDAV launched a digital platform for the management of reprography rights, announced on 27 July 2026 and opened to registrations on 1 August 2026.^[22] It serves journalists and publishers and does not extend to artistic or artisanal works. Its relevance here is as demonstrated administrative capability: a national body can operate a registration portal, identify rights holders, and administer collection and distribution at scale. Section 4 proposes extending that capability to the licensing of artistic and artisanal works for machine training; no such extension currently exists.

3.3 The resale right for visual artists

Law No. 66-19 introduced a resale right as an inalienable entitlement, allowing visual artists including sculptors and painters to receive a percentage of the proceeds when an original work is resold on the secondary market.^[16] Section 4.4 discusses why this right is a useful precedent but not the correct legal vehicle for the remuneration proposed here.

3.4 National strategy, data protection and international engagement

Morocco's national digital strategy is Digital Morocco 2030 (*Maroc Digital 2030*), issued in 2024 by the Ministry of Digital Transition and Administration Reform.^[21] UNESCO's country profile lists the Strategy for Developing an AI Ecosystem and the AI Khawarizmi Programme as key AI policies, but records that Morocco has **no strategy specific to artificial intelligence**.^[3] The framework proposed here would therefore have to be carried by copyright and craft sector legislation rather than by a strategy document. Personal data is regulated under Law No. 09-08 of 18 February 2009, administered by the National Commission for the Control and Protection of Personal Data (CNDP).^[19] The most substantial evidence of international engagement is the RAM itself, completed in cooperation with UNESCO and including a national public consultation.^[3]

3.5 Applying the four axes to Morocco

Table 2 applies the four axes to Moroccan law. The result is mixed.

One axis returns readiness in substance, two return partial or indirect readiness, and one returns none on its express question. No cross country comparison is made, and Table 2 shows that Morocco's position is uneven on its own terms. What the case demonstrates is narrower and more useful: a folklore provision drafted in 2000 by reference to categories of use, with an authorisation right vested in a public office and receipts earmarked for the cultural sector, can function as an anticipatory mechanism for the computational use of cultural heritage ahead of any binding international instrument, and a 2026 enforcement amendment has incidentally supplied part of the evidentiary apparatus such a mechanism needs.

4 The Digital Maâlem model

4.1 The concept and its cultural grounding

In Moroccan craft culture the *maâlem* is the master artisan, the custodian of technical mastery and of the cultural authenticity of a practice, and the figure through whom a tradition is transmitted. The proposal here is to give that role a legal function: legislation suggesting that an AI system deployed in the artisanal or creative sector operate under the responsibility of a **certified Digital Maâlem**.

The purpose is human oversight, in the sense in which the UNESCO Recommendation uses that term.^[1] The reason for attaching oversight to this figure rather than to an abstract human in the loop is that oversight is only meaningful when exercised by someone with the standing and the competence

to exercise it. A master artisan can judge whether a generated design is a legitimate development of a tradition or a debasement of it. A compliance officer cannot, and a requirement that produces a signature without a judgment is a formality.

4.2 Institutional design

Table 3 states the design. Every row is a design proposal of this paper and none is a description of existing law, but each is anchored where possible on an institution that already holds the relevant function.

Two such institutions matter. The authorisation right over the commercial use of expressions of folklore is already vested in BMDAV by Article 7(4) of Law No. 02-00,^[14] so licensing cannot sensibly sit anywhere else. Certification of craft mastery is a different competence, and it already has a statutory home: the regional chambers of crafts are public establishments of a professional character with legal personality and financial autonomy, established under Law No. 18-09, which represent artisans, craft enterprises and craft cooperatives before the public authorities at national, regional and local level, act as a central partner in the design and implementation of sectoral strategies, and maintain a register of artisans, craft enterprises and cooperatives within their territory.^[20] Twelve chambers cover the Kingdom, one for each region, and they are placed under the supervision of the State, whose object is to secure their compliance with Law No. 18-09.^[20] The Maison de l'Artisan, a public establishment under the supervision of the ministry responsible for the artisanal sector, is the operational partner for sector facing programmes.^[20]

4.3 The professional digital twin

The second component is a **professional digital twin**, defined in this framework as a registered record of technique, pattern vocabulary and method, held under the artisan's control, from which a commercial user may license. Where a twin is exploited commercially, the artisan receives remuneration for a duration set by the framework.

The term is used by analogy with the digital twin in engineering, where a persistent digital representation is kept linked to a real world counterpart. Here the counterpart is an artisan's practice rather than a physical asset, and the qualifier *professional* limits the record to craft technique and method: it does not capture the artisan's likeness, voice or personal data, and it is not a generative model of the artisan. The term is retained because it conveys the two features the framework needs, a durable record and a continuing link to a living, identifiable contributor.

A woodcarver or a zellige artisan records their techniques and patterns in a twin. When an enterprise uses AI generated designs derived from those patterns, the artisan receives a share of the proceeds. This is the transformation the model

Table 2. The four axes applied to Morocco.

Axis	Governing provision	Gap	Readiness finding
1. Human authorship	No express provision. Law No. 013.26 preserves the requirement that a protected work be an original creation of a natural person ^[18]	AI assisted / AI generated distinction; ownership where a human contribution exists; status of outputs derived from a registered artisanal technique	Not ready on the express question; implicit default only. The principal legislative gap.
2. Training data governance	Law No. 09-08 (personal data); ^[19] use based protected acts, Art. 7(1) of Law No. 02-00; ^[14] piracy definition covering digital means, Art. 1(33) of Law No. 013.26 ^[18]	Disclosure of training sources; an operable text and data mining opt out; compensation for heritage material in a corpus	Indirect. Coverage arrives through general rules, none addressed to machine training.
3. Folklore and TCEs	Art. 7 of Law No. 02-00 as amended; BMDAV mandate under Law No. 25-19. ^{[14][16][17]} Commercial use by reproduction, communication, adaptation or fixation requires BMDAV authorisation (Art. 7(4)), attribution to the community of origin (Art. 7(3)), with receipts earmarked (Art. 7(5))	Express confirmation that machine training falls within the mandate; standing of communities against the administering body	Ready in substance, untested in application. Use based drafting can reach computational use without amendment.
4. Judicial capacity	Art. 2(60) of Law No. 013.26: inspection of the information systems of users of protected works ^[18]	Reach to corpora held abroad; burden of proving corpus composition; affordable expert evidence; specialised IP competence	Partial. An instrument of the right kind exists; reach to foreign developers is open.

exists to accomplish: artisans in developing countries cease to be free training data and become economic partners in the AI value chain.

The register need not be built from nothing, and should not be. Under Law No. 18-09 each chamber of crafts maintains, within its territory, a register of craft enterprises, craft cooperatives and artisans,^[20] and the sector separately operates a National Artisan Register with its own regulatory framework and professional artisan card.^[20] The proposal is that the professional digital twin be constituted as a **rights layer attached to that existing registration**, with BMDAV administering the licensing and collection side under its Article 7 mandate and the chambers administering identity and craft verification. This keeps the institutional cost low and avoids creating a parallel register that artisans would have to join twice.

Two clarifications. The rights layer is a proposal; Section 3.2 records only the administrative capability that makes it plausible. And collection is not automatic: it depends on a licensing relationship with the deploying enterprise, on the deployment falling within the scope set in Table 3, and on a tariff base that the framework must set.

On that tariff base, the paper proposes a provisional default rather than leaving the question open. Where the contribution of a registered twin to a commercial output can be attributed, the charge should be a percentage of the revenue attributable to that output. Where attribution is impracticable, which will be the common case for a diffuse pattern vocabulary, the charge should take the form of a blanket licence administered by BMDAV, priced by reference to the licensee's revenue in the relevant product category, with distribution to registered artisans and to the communities of origin. Article 7(5) of Law No. 02-00 already provides the distribution principle, since sums received are allocated to

professional purposes and to cultural development rather than to general revenue.^[14] The percentages are deliberately not proposed here: they are a matter for the implementing instrument and for negotiation with the sector, and a figure asserted in a conceptual paper would carry a false precision.

4.4 A remuneration right, not an extension of the resale right

One possible construction is a digital resale right, extending the resale right of Section 3.3 so that an artist would receive a percentage when an AI generated work inspired by their original creation is resold or licensed. That construction does not hold, for two reasons.

The resale right attaches to the resale of a physical original, and the transaction contemplated here is the licensing of a generated output, which is a different economic act. More seriously, the construction is circular: it claims a share in the proceeds of an AI generated work while Axis 1 leaves open whether an AI generated work is protectable at all, and the human authorship requirement preserved by Law No. 013.26 makes it likely that a purely generated output is not.^[18] A royalty cannot rest on an entitlement the framework itself treats as unsettled.

The correct construction is a **new statutory remuneration right**, attaching to the commercial exploitation of outputs derived from a registered contribution, and expressly independent of whether the output is itself a protected work. The right is triggered by the derivation, not by the authorship of the result. This is both doctrinally cleaner and stronger in effect, because it survives whatever answer a jurisdiction eventually gives to Axis 1. The resale right of Law No. 66-19 remains a valuable precedent for the proposition that a na-

Table 3. Institutional design of the Digital Maâlem requirement.

Element	Proposed design
Legal nature	A licensing condition on commercial deployment, coupled with an allocation of responsibility. No new proprietary right and no exclusivity.
Scope	AI systems deployed or marketed within the national territory to generate artisanal or creative designs. Scope is territorial because an obligation on model developers beyond national enforcement would be unenforceable.
Licensing authority	BMDAV, which holds the authorisation right under Art. 7(4) of Law No. 02-00 and has demonstrated registration capability through the reprography portal. ^{[14][22]}
Certifying authority	The regional chambers of crafts, which hold the statutory artisan register under Law No. 18-09, supported by the Maison de l'Artisan. ^[20] No new institution is created.
Certification criteria	Demonstrated craft mastery, assessed by the chamber; recognition by the professional community; documented understanding of the generative tools to be overseen.
Obligations of the certified Maâlem	Review of generated output for cultural fidelity before release; a record of the traditions and registered contributions drawn on, naming the community or locality of origin (Art. 7(3)); ^[14] refusal of authorisation where an output misrepresents a tradition.
Consequence of non compliance	Unlicensed commercial use, engaging the ordinary copyright remedies, including inspection under Art. 2(60) of Law No. 013.26. ^[18] No new sanction.
Dispute route	Administrative determination by the certifying chamber, appealable to the courts competent in intellectual property matters.
Relationship to the artisan	Certification transfers no right of the artisan and does not replace consent (Section 4.3). The Maâlem exercises oversight; the artisan holds entitlement.

tional legislature will accept a continuing economic interest in the downstream exploitation of a creative contribution, which is the principle the new right requires.

4.5 Open questions for a future legal framework

Four questions must be resolved before the digital twin could be implemented, and they are set out here as conditions rather than as difficulties, because a framework that does not name them is not ready to be legislated.

First, consent. Registration of a digital twin should rest on the artisan's free, prior and informed consent, renewable and revocable, and not on a one time authorisation bundled into a platform's terms of use. A revocable consent has consequences for models already trained, which the framework must address.

Second, inheritance. Because artisanal skill is transmitted

across generations within a family or a workshop, the framework must specify whether the economic right attached to a twin is personal to the artisan, transferable inter vivos, or heritable, and for how long after the artisan's death.

Third, attribution of a diffuse artisanal style. Many decorative traditions, zellige geometry among them, are the product of a community of practice rather than of a single identifiable author. This complicates individual royalty allocation and may call for a collective or guild based rights holder model rather than a purely individual one. This is the hardest of the four questions and the one on which the model's legitimacy most depends, because a scheme that awarded a communal tradition to whichever artisan registered first would reproduce the appropriation it exists to prevent. Article 7(3) of Law No. 02-00 is a useful starting point, since it already requires attribution to a community or locality rather than to an individual,^[14] but an attribution duty is not the same as a rights holding structure.

Fourth, enforcement against model developers outside the jurisdiction. Most large generative AI providers are domiciled abroad, so a purely national registration and licensing scheme must be paired with cross border mechanisms: reciprocal agreements between collecting societies, cooperation through WIPO, or reliance on disclosure obligations with extraterritorial reach of the kind found in the European Union AI Act.^[9]

These questions are not resolved here. They are the necessary next stage of research once the conceptual framework has been tested against implementation.

5 Counterweights and objections

A proposal of this kind attracts three serious objections, addressed in turn below.

5.1 State custodianship of community expressions

The mechanism described above vests the power to license expressions of folklore in a public body, as Article 7(4) already does.^[14] The standing objection in the traditional cultural expressions literature is that this substitutes the state for the communities whose expressions are at issue, and converts a communal entitlement into an administrative asset. The objection has force, and it is sharpened by Section 4.5's recognition that zellige geometry belongs to a community of practice: if the tradition is communal, it is not obvious why a public office should hold the licence.

Three responses are available, and the framework should adopt all three rather than choose. Administration by a public body is a practical necessity where communities have no

legal personality capable of holding and enforcing a right, and it is a second best rather than a principle. The administering body's mandate should be constrained by a distribution obligation running to the community of origin, and Moroccan law already contains the two elements from which such an obligation can be built: Article 7(3)'s duty to name the community or locality of origin, and Article 7(5)'s earmarking of receipts for professional purposes and cultural development.^[14] Reading them together, the statute already treats the community as the referent of the right and the sector as the beneficiary of the proceeds; what is missing is a rule directing the proceeds to the named community rather than to the sector at large. And the framework should provide a route by which a guild, cooperative or community structure can be recognised as the rights holder where one exists and wishes to hold the right. Here the craft cooperatives already represented by the chambers of crafts under Law No. 18-09 are the obvious candidates,^[20] which makes public custodianship a default rather than a permanent allocation.

5.2 Access, reuse and the public domain

A licensing charge on expressions of folklore has costs, and they fall in part on the people the framework is meant to serve: on other artisans working within the same tradition, on cultural and educational reuse, on diaspora practice, and on scholarship. A regime that made a motif expensive to reuse could freeze a living tradition in the name of protecting it.

Moroccan law has already drawn part of this line. Article 7(1) engages only where a use has a commercial aim or lies outside the conventional or customary framework, and Article 7(2) excludes personal use, short extracts in news reporting, and use solely for direct teaching or scientific research.^[14] The position this paper adopts is that the charge should attach to **commercial exploitation at scale by an enterprise external to the tradition**, and not to practice within the tradition, to non commercial cultural or educational use, or to individual artisanal production. That is a reading of the existing trigger rather than a new exception, which is an advantage: the line is already statutory and has been administered since 2000. Where exactly it falls in the computational context is a question for the implementing instrument, and the framework should not pretend the trade off is absent.

5.3 Jurisdictions without an equivalent institutional base

The Moroccan case rests on four things being in place: a copyright statute with a use based folklore provision, a copyright office holding the authorisation right, a sectoral chamber structure maintaining an artisan register, and a demonstrated digital registration capability. Many of the countries this pa-

per addresses have at most the first, and a framework that assumes all four is a framework for Morocco rather than for developing countries.

For jurisdictions without that base, the four axes remain diagnostically useful, but the sequence of the recommendations in Section 6 changes. The statutory folklore mandate of Axis 3 is the prerequisite, since without it there is no legal basis on which to license, and the Moroccan drafting technique is the transferable part: protecting categories of use rather than naming technologies is what allowed a provision from 2000 to reach a problem from 2026. Institutional capacity can be shared before it can be built: a regional collecting arrangement, administered jointly, would give smaller jurisdictions a licensing counterparty without each having to construct a copyright office of its own, and registration infrastructure can be regional for the same reason. What cannot be borrowed is the statutory basis, which is why Section 6 places it first.

6 Recommendations

Four recommendations follow, sequenced by what can be done unilaterally and soon against what requires international agreement.

The feasibility of these recommendations is not established by proposing them, and three constraints should be stated. A rights layer on an existing register is cheaper than a new institution but still requires sustained funding, and the identity of the funder is not obvious in a sector whose participants are largely informal. A digital royalty will not be paid voluntarily by platforms in the absence of an enforcement mechanism, which is why Recommendation 4 depends on the disclosure obligations discussed under Axis 2 rather than on goodwill. And a levy adopted by a single jurisdiction invites relocation of training activity to jurisdictions that have not adopted one, which is a free rider problem that only coordination at the level of Recommendation 4 can address. These are the hard problems, and the framework identifies rather than solves them.

7 Limitations and scope conditions

The limitations of this contribution are consolidated here.

1. **This is a conceptual and policy framework, not a measurement instrument.** The four axes carry no indicators, weights or scores, and no jurisdiction is ranked. Operationalizing them would require item construction, calibration and reliability testing that lie beyond this paper.
2. **The axes are stipulated rather than derived.** Section 2.1 gives the reasoning and Table 1 gives the provenance, but

Table 4. Recommendations, sequenced.

#	Recommendation	Actor	Horizon	Precondition
1	Enact or confirm a statutory mandate over the commercial use of expressions of folklore, drafted by categories of use rather than technologies, stating expressly that it extends to machine training and generation. In Morocco, a clarification of Art. 7 of Law No. 02-00.	National legislature; copyright office	Immediate; unilateral	None
2	Attach a rights layer for creative and artisanal works to the existing artisan registers, so that a contribution is documented before it enters the digital space and priority can be shown in a dispute.	Copyright office with the chambers of crafts	Short term; unilateral	Rec. 1
3	Adopt the Digital Maâlem model as a voluntary mechanism securing human oversight and a fair return in the creative and craft sectors.	National legislature; chambers of crafts; craft cooperatives	Medium term; sectoral agreement	Recs. 1 and 2; design in Table 3
4	Coordinate developing country positions within WIPO on licensing cultural heritage as training data, ^{[10][11]} and pursue a Cultural Protocol on AI under the 2005 Convention ^[13] requiring global platforms to pay a digital royalty for training on that heritage.	States collectively, through WIPO and UNESCO	Long term; international agreement	Recs. 1 to 3, which supply the negotiating position

a different and equally defensible partition of the field is available, and the framework is offered to be revised.

3. **One jurisdiction is analysed.** Morocco is an illustrative national case and not a statistically representative sample of developing countries. Whether its legislative trajectory transfers to jurisdictions with different legal traditions and institutional capacities is an open question, addressed only partially in Section 5.3.
4. **The framework assumes an institutional base that many addressees lack,** as Section 5.3 sets out.
5. **Exposure is documented; displacement is inferred.** Section 1.1 evidences that Moroccan traditional repertoires are already inputs to generative production. It does not establish that generated output has displaced artisanal income. No market data, sectoral survey or income series is presented, and the commercial harm on which the urgency of the argument rests therefore remains an inference.
6. **The reading of the Moroccan readiness assessment relies on the country profile published by UNESCO's Global AI Ethics and Governance Observatory,** not on a full reading of the country report itself. The proposition that the assessment's legal findings do not reach cultural intellectual property is therefore a statement about the published findings, and the full report should be consulted before it is repeated.
7. **Axis 3's central proposition is untested.** That the Article 7 protected acts reach the computational use of an expression of folklore follows from the drafting, which is by use rather than by technology, but no Moroccan authority or court has yet confirmed it and BMDAV has not to date licensed a training use.
8. **Axis 4's inspection power is untested in this application.** Article 2(60) of Law No. 013.26 is drafted for the enforcement of piracy offences. Whether it can be directed at establishing the composition of a training corpus, and whether it has any reach beyond systems physically present in the jurisdiction, is unresolved.
9. **The Digital Maâlem model is untested.** No pilot has been conducted, no artisan has registered a twin, no certification has been issued and no tariff has been set. Table 3 is a design proposal in full.
10. **No artisan, guild, cooperative or community organization was consulted** in the preparation of this framework. For a proposal whose subject is the entitlement of artisanal communities, this is a material limitation, and consultation through the chambers of crafts and the craft cooperatives should precede any implementation step.
11. **The economic model is incomplete.** Section 4.3 proposes a tariff basis but no percentages, and the method of attributing a model's use of a pattern vocabulary, together with the apportionment of a blanket fee among members of a community of practice, is unresolved.
12. **The paper does not assess the counterfactual.** Whether a licensing regime would in fact improve artisanal incomes, or would principally generate administrative revenue, is an empirical question this framework cannot answer.

8 Conclusion

Legal readiness is not a luxury but a prerequisite for digital sovereignty. Without flexible legal frameworks capable of protecting human creativity, developing countries will become consumers of machine generated culture, deprived of the

value of their own artistic and artisanal creation.

The Moroccan case yields two findings. The first is positive: a folklore provision drafted in 2000, protecting categories of use rather than named technologies and vesting the authorisation right in a public office, can reach a problem that did not exist when it was written, and a 2026 anti piracy amendment has incidentally supplied the inspection power its enforcement requires. Good drafting technique proved more durable than any AI specific instrument could have been.

The second finding is negative: Morocco still has no provision distinguishing AI assisted from AI generated work. Recency of legislative activity is not coverage, and a framework earns its place by being able to say so about the jurisdiction it admires.

The Digital Maâlem model illustrates how legal innovation can bridge cultural authenticity and technological development, by attaching oversight to a figure who can exercise it, remuneration to a contribution that can be registered, and both to institutions that already exist. It is a proposal, it is untested, and the conditions it must satisfy are set out in Section 4.5. It is put forward to be examined.

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strategies discussed in Section 3.

Declaration of generative AI use. The author used Claude and Perplexity to assist in researching references and in the formulation and coherence of the text, and DeepL for translation. The framework, the analysis, the four axes and the Digital Maâlem model are the author's own. All AI assisted text was reviewed and edited by the author, who retains full responsibility for the content of this paper.

Data availability. This study analyses published legal instruments and institutional documents only. No datasets were generated. All sources are cited in the References, and their provenance is described below.

Ethics. This study involved no human participants, no field-work and no personal data.

Provenance of Legal and Institutional Sources

The legal and regulatory materials cited in this study originate from official and public legislative repositories:

- The Moroccan legal texts discussed in this paper (Law No. 02-00, Law No. 34-05, Law No. 66-19, Law No. 25-19, Law No. 013.26, Law No. 09-08 and Law No. 18-09) were consulted in their official versions published in the *Bulletin Officiel* of the Kingdom of Morocco.
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Where a source is available online, a locator is given in the References.

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Review

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