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## Protection of Traditional Knowledge and its Resulting Innovation

## Protección del Conocimiento Tradicional y su Innovación Resultante

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### ABSTRACT

**Purpose.** This document aims to propose a reflection on how important it is for emerging countries to protect their traditional knowledge and the potential it must generate resulting innovation.

**Methodology.** The mentioned above is based on defining what traditional knowledge is, the scope and limitations of the practice by the countries that recognize it, and its relationship with the concepts of the 2018 Oslo Manual (OECD, 2018) on innovation.

**Findings and originality.** It is concluded that there is still work to be done since there are persistent problems such as the lack of schemes: regulatory protection, rapprochement of cultural and/or traditional issues as well as marketing, among others, for emerging countries, which, if achieved, will allow them to reflect it in the improvement of their economies.

### RESUMEN

**Propósito.** El presente documento está orientado a proponer una reflexión sobre lo importante que es para los países emergentes, proteger su conocimiento tradicional y las potencialidades que tiene para generar innovación resultante.

**Metodología.** Esto parte de definir lo que es el conocimiento tradicional, alcances y limitaciones de la práctica por parte de los países que la reconocen, así como su relación con los conceptos del Manual de Oslo 2018 (OECD,2018) sobre innovación.

**Hallazgos y Originalidad.** Se concluye que aún hay trabajo por hacer ya que existen problemas persistentes como la falta de esquemas: regulatorios de protección, acercamiento de los temas culturales y/o tradicionales así como de comercialización entre otros, para los países emergentes, que de lograrlo, les permitirá reflejarlo en la mejora de sus economías.

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## **1. Introduction**

Traditional knowledge is all that ancestral wisdom and collective and comprehensive knowledge possessed by indigenous peoples, Afro-Americans, and local communities, based on ancient praxis and its process of human-nature interaction, and transmitted from generation to generation, usually orally. (De la Cruz, 2005). Here the questions arise as to whether it is possible to register them and consider them as a basis for generating innovations. It is an interesting question to pose how the empirical knowledge of a culture generated in hundreds (or even thousands) of years is incorporated into the current systematic knowledge that allows generating innovations and registering both. This chain is affected by a series of briefly described problems, beginning their possible solution, with what is exposed as protection of traditional knowledge and its resulting innovation.

### **1.1. Traditional Knowledge**

Traditional knowledge can be defined as the understanding or skill developed and preserved by members of an indigenous group regarding the social uses, actual or potential benefits of natural resources (such as plants, animals, or components thereof) or cultural practices (such as rituals, narratives, poems, images, designs, clothing, fabrics, music or dance) (Fisher, 2018). It is important to consider it in the economic development of nations, particularly in biodiversity, agriculture, and traditional medicine. (Kaushik, 2004)

The traditional knowledge of the people provides information. It allows an understanding that complements science and conventional environmental observations and facilitates a holistic understanding of the environment, natural resources and culture, and the interrelationship between them and humanity. (CEPAL, 2016). Indigenous peoples have much to contribute to the economy, as they are characterized by a different logic, which can be applied in State policies (Verdú-Delgado, 2017).

Thus, the preservation, protection, and promotion of knowledge, innovations, and traditional practices of local and indigenous communities are vital for developing countries. Its rich endowment of traditional knowledge and biodiversity plays a critical role in health care, food

security, culture, religion, identity, environment, sustainable development, and trade. It is particularly crucial for the most vulnerable segments of their societies and indigenous peoples worldwide (UNCTAD, 2004).

A problem that persists today is that countries with indigenous populations continue to be pressured to protect the interests of those communities and want to participate in the profits that the use of traditional indigenous knowledge can bring to the benefit of their economies. Multinational companies still do not give importance to this balance: they take the genetic material for free and then sell it to the country of origin, making the real creators pay for their innovations motivated by the lack of regulation in the countries (Posey, 1999).

Considering that traditional knowledge is a potential empirical source of preservation and development of new products and/or services, is it possible to associate it with current innovation concepts?

## **1.2. The innovation**

According to the Oslo Manual (OECD, 2018, p.20), innovation is defined as:

“...a new or improved product or process (or a combination thereof) that differs significantly from the previous products or processes of the unit and that has been made available to potential users (product) or put into use by the unit (process)”

In order to reduce the complexity of concepts, it is highlighted the Oslo Manual in its 3rd edition. It involves four types of innovations (product, process, organization, and marketing).

In the fourth edition (OECD, 2018, par.1.31), it is reduced to only two main types, as follows:

*“Product innovation is a new or improved good or service that differs significantly from the previous goods or services of the company and that has been introduced on the market.*

*Business process innovation: is a new business process or enhanced for one or more business functions that differ significantly of the company's previous business processes and that has been put to use by the company”.*

The Oslo Manual, in its fourth edition, proposes several alternative approaches to promote innovation through carrying out eight business innovation activities (OECD, 2018, para. 1.36), these being: 1). R&D activities; 2). Engineering, design and other creative activities; 3). Marketing activities and brand value; 4). Activities related to intellectual property (IP); 5).

Employee training activities; 6). Software and database development activities; 7). Activities related to the acquisition or lease of tangible assets; 8). Innovation management activities.

Empirical traditional knowledge has great potential for the economic and social development of emerging countries, and even has the possibility of being incorporated into commercial innovations and contributing to social development in many non-commercial ways (Olivé, 2007) that impact the economy.

According to Jensen (et al., 2007), at least two ideal modes of learning and innovation are recognized in economics. The first is based on the production and use of codified scientific-technical knowledge (**STI** mode. Science, Technology, and Innovation mode). The second, of a more experiential nature, is based on the actions of doing-using-interacting in communities of practice (**DUI** mode. Doing, Using and Interacting mode).

Both modes of learning and innovation are usually related to different types of knowledge; thus, while the **STI** mode is based on mostly explicit or codified knowledge (giving priority to the production of "know-what" and "know-why"). It constitutes the articulated knowledge that produces innovation; the **DUI** mode takes advantage of mostly tacit or codified knowledge. Implicit (prioritizing "know-how" and "know-who or know-where") being the basis of traditional knowledge. Both types of knowledge require recognition to gain protection and momentum.

## 2. Discussion

Given the novelty and apparent lack of structure of traditional knowledge, one would think that the industry would take a position against its protection, which is not necessarily the case. According to Roberts (2004), the traditional knowledge protection that generates innovation is elicited by:

- *Preservation*, due to its intrinsic value for its owners, for the world and for future generations;
- *Promotion*, through its widest dissemination and use for the benefit of the human race as a whole;
- *Control*, in order to prevent its lack of use and
- *Guarantee* the adequate participation of the benefits to their owners in the use of traditional knowledge.

Hence, we have:

1. **Theoretical implications.** There are generally coincident positions that, except trademarks and patents, traditional knowledge should be free as far as possible. This circumstance must be studied carefully and determine the justifiable limits regarding the protection of commercial, intellectual property and traditional knowledge. Given the complexities of protection, it is recommended that it be simple, consistent and practical (Roberts, 2004) based on:
  - a. No restriction of knowledge that is already in the public domain. In some cases, traditional knowledge has entered the public domain without the consent of its owners, sometimes despite their explicit opposition. However, once information is in the public domain, there are great difficulties in controlling it, so any exceptions to make such knowledge free must be done carefully (Roberts, 2004).
  - b. Digital library of traditional knowledge. For preventing unfair and harmful effects on economic activity, such as piracy, it is necessary to develop digital databases of related prior knowledge (such as plants, minerals, animals, etc.) already in the public domain. There are experiences in other countries such as India that have generated their database of medicinal plants known as the "*Traditional Knowledge Digital Library*." This would allow patent offices worldwide to search for and examine previous or existing uses of knowledge that may have resulted in an "invention" (Kaushik, 2004). Documentation of traditional knowledge may serve the defensive purpose of preventing the patenting of knowledge as it exists, but documentation alone will not facilitate benefit sharing with traditional knowledge holders (Kaushik, 2004).
2. **Practical implications.** No retrospective application. This topic is controversial, and exceptions may be necessary. A retrospective scheme will impose obligations on existing users that they would perceive as unfair and may be challenging to meet. In addition, such a scheme, without time limits, can pose conceptual and operational problems, for example, when identifying a particular type of knowledge, in which today a group of people is its owners and who could have received it hundreds or thousands of years ago (Roberts, 2004). System of registration of innovations and patents by inventors. Creating such a system would be equivalent to giving them the right to challenge any use of their innovations without prior permission (Kaushik, 2004).
  - a. Consistency with the protection of existing forms of intellectual property rights. This issue, too, is controversial and is not an obvious priority for advocates of traditional

knowledge protection. However, it has been suggested that such consistency is easy to achieve and politically essential. While there is no great enthusiasm in industry circles for any form of protection of traditional knowledge, there are currently no strong objections to it either.

- b.** However, suppose protection is seen as displacing the system or damaging intellectual property rights (patents, trademarks, copyrights, trade secrets) that are highly valued by industries in the developed world. In that case, those industries will undoubtedly mount a powerful bloc with their governments against the system. This would be undesirable and unnecessary (Roberts, 2004). It should be noted that every innovation is an invention, patent, brand, utility model and/or copyright that must result in successful commercialization (Mejía-Trejo, 2019). If this focuses on traditional knowledge, new opportunities open up marketing and business.
- c.** However, it should be recognized that certain indigenous communities will prefer to focus on cultural aspects and spiritual values (Posey, 1999) rather than commercial ones. It should also be noted that there are limitations for the traditional knowledge trader. For example, sustainable harvesting of a plant from which a product based on traditional knowledge is derived is feasible. However, it may be blocked due to a conservation policy that does not allow use.
- d.** For developing countries, it should be of paramount importance to legislate to ensure that the cumulative innovation benefits associated with traditional knowledge enhance their socio-economic development. Prevention targets for misappropriation also need to be defined, as there remains little or no compensation for custodians who have violated their prior consent (UNCTAD 2004). Even the neglect of governments to traditional knowledge and the innovations it could generate has meant that their knowledge is becoming extinct for indigenous peoples faster than the environment that surrounds them (Posey, 1999).

### **3. Conclusions**

Hence, there is a strong relationship between traditional knowledge and innovative capacity, which needs to be promoted and marketed. In this way, strengthening the innovative capacity of indigenous and local communities based on developing traditional knowledge, in various industries, initially food and health, will generate support for their long-term sustainability and economic development and help protect their traditional knowledge. Central and local

governments can enhance innovation by creating special support mechanisms or facilitating the exchange of experience and skills between indigenous and local communities. It is also feasible to use suggested tools such as the Oslo Manual (OECD, 2018) to measure the factor resulting from the innovation of traditional knowledge.

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