
TRADITIONAL KNOWLEDGE AS A FACTOR OF AGRO-FOOD SECTOR DEVELOPMENT IN THE REPUBLIC OF SERBIA

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Abstract: *Traditional knowledge is something unique, something that is the fruit of years of human creativity and ingenuity in certain area.* The importance of traditional knowledge, from the aspect of experts, in many sectors is incommensurable, but for economy is the most, particularly for agro-food sector development, preserving traditional values and sustainable rural development. Having in mind that the Republic of Serbia is the country with an abundance of **natural resources** for the popular organic production, then has a very rich agricultural history, tradition, folklore and long experience in food production, the integration between traditional and new knowledge (technology) in food sector is still absolutely not enough, but definitely necessary. A better understanding of the importance for integration of traditional *knowledge* into contemporary processes of agro-food sector development may help to serve the long-term economic and non-economic interests, investments and sustainable development. The integration of traditional knowledge and contemporary technologies, with institutional supporting, are essential if the country wants to remain part of the world development trends. One way to become a country of interest not only to investors but also to visitors all around the world is building own brands, with protection of traditional values, especially knowledge and domestic food products.

Keywords: *traditional knowledge (TK); agro-food sector; sustainable development; Republic of Serbia.*

1. INTRODUCTION

The problem area of this article refers to the role of traditional knowledge in agro-food sector, especially in economic sense. Thereby, the focus is on the possible positive effects caused by good and wider implementation of traditional knowledge in contemporary agro-economic practice.

The subject of this research determines the importance of traditional knowledge for agro-food sector development, with an accent on the Republic of Serbia. A special attention is focused on the concretization of the problem by defining and explaining all phenomena which describe it as a theoretical and operational topic. Also, the attention is focused on the analysis of factors that led to the emergence of problems and possible solutions. Accordingly, a research goal is to confirm a great importance of traditional knowledge for food sector development of every country.

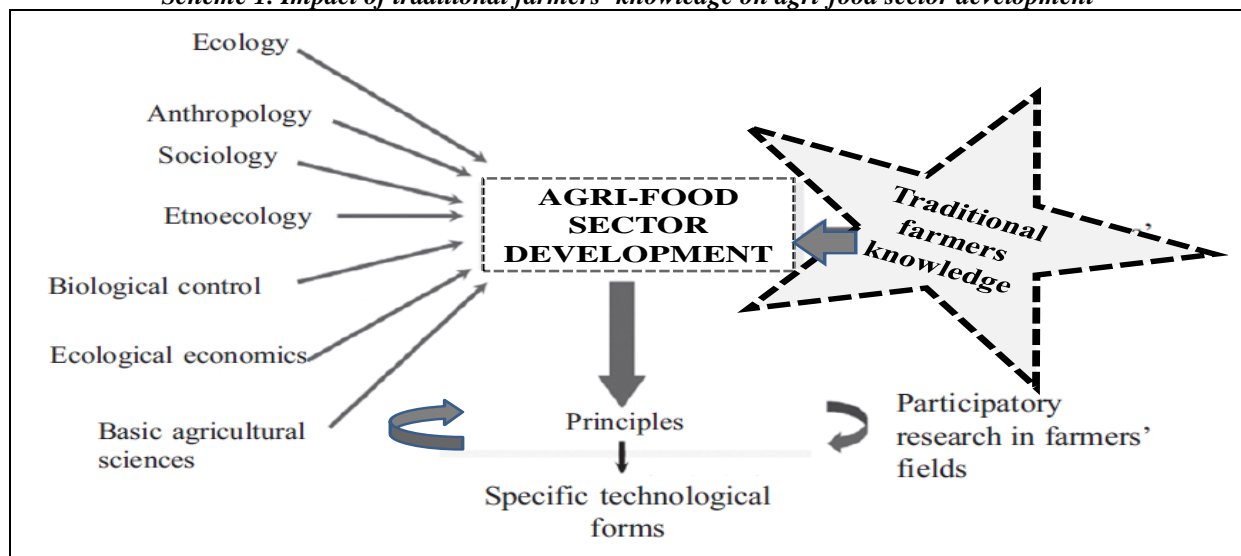
The hypotheses of the paper: Protecting domestic products and traditional knowledge, through the good marketing, branding, regulations and the like, not only domestically but also on the European and other markets, leads to the sustainable development of agro-food sector, based on knowledge and law.

The development of strong and protected brands related to healthy food, tradition knowledge and the like, could lead to an increase in demand in the foreign markets, exports and additional revenue. The growth in demand in the international markets for food-based organic products could stimulate agricultural production, sustainable rural development, agribusiness and food sector development as a whole. It could help to solve some basic problems of unemployment, rural-urban migrations, poverty, social exclusion, etc.

Protection of traditional knowledge, access to genetic resources and sharing of related benefits are issues of great importance for developing countries, because of their usually enormous ecological, cultural and social resources. These issues have emerged in a number of policy areas, including agriculture, food processing, environment, human rights, health, culture, trade and general economic development. Anyway, the traditional knowledge still is not usually included enough into agro-food sector development of many less developed countries, including Serbia. In the future, the traditional knowledge should be more supported with the aim to get more positive economic and non-economic effects. A successful contemporary agro-food sector combines elements of traditional farmers' knowledge with elements of modern economic, ecological and social sciences (Scheme 1), so these factors should have in mind.

Thereby, a smart growth, through adequate knowledge management and development of human resources, is really necessary.⁹

Scheme 1. Impact of traditional farmers` knowledge on agri-food sector development



Source: Based on Altieri, M. A. (2015). *Agro-ecology: key concepts, principles and practices*. Malaysia: TWN & USA: SOCLA, CENSA.

2. MATERIALS AND METHODS

A defined subject of the research problem in this paper is a part of complex real-world phenomena and thus the paper is divided here into several related components to be analyzed separately. These components highlight the importance of reductionism, that is, the analytical method of science, which helps in the analysis of certain phenomena, effects and trends of selected variables. This paper analyzes the main components of the problem area and establishes a logical connection between them. Thereby, the system thinking is isolated as a separate and very important method. The comparative method is used to compare different countries. This paper is based on the results of previous scientific research, official statistical and available empirical indicators on issues under consideration, then relevant strategic documents, and legal regulations underlying traditional knowledge, folklore, intellectual property protection and food sector development. The description method is used for detailed description of the development potentials and limitations managers face on the road to preserve traditional values (knowledge etc.).

3. IMPORTANCE OF TRADITIONAL KNOWLEDGE

The term 'traditional knowledge' is frequently used as a category of specific knowledge.¹⁰ Posey & Dutfield (1996) have summarized a range of categories and embodiments of traditional knowledge and folklore (Table 1).¹¹

Table 1. The categories and embodiments of traditional knowledge and folklore

✓	knowledge of current, previous or potential use of plant and animal species, as well as soils and minerals
✓	knowledge of preparation, processing or storage of useful species
✓	knowledge of formulations involving more than one ingredient

⁹ Lyubcheva, M. (2017). Smart growth through knowledge management and development of human resources. *12th International Scientific Conference Knowledge without Borders, Vrnjacka Banja, Serbia*. Skopje: IKM. *International Journal Scientific Papers*, 16.2, 477-491.

¹⁰ Phillips, P. (2014). Traditional Knowledge. In book: *Socio-Economic Considerations in Biotechnology Regulation*. Germany: Springer; Chianese, F. (2016). *The Traditional Knowledge Advantage*. Italy: IFAD; Okediji, R. L. (2018). *Traditional Knowledge and the Public Domain*. Canada: CIGI.

¹¹ Posey, D. A. & Dutfield, G. (1996). *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities*. Ottawa: IDRC.

✓ knowledge of individual species (planting methods, care, selection criteria, etc.)
✓ knowledge of ecosystem conservation (methods of protecting a resource that may be found to have commercial value, although not specifically used for practical purposes by local community)
✓ classification systems of knowledge, such as traditional plant taxonomies
✓ renewable biological resources (e.g., plants and animals) that originate in indigenous lands and territories
✓ cultural landscapes, including sacred sites
✓ non-renewable resources
✓ handicrafts, works of art, and performances
✓ traces of past cultures
✓ images perceived as 'exotic'
✓ cultural property (i.e., culturally or spiritually significant material culture, such as important cultural artifacts, that may be deemed sacred and, therefore, not commodifiable by the local people)

Source: Posey, D. A. & Dutfield, G. (1996). *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities*. Ottawa: IDRC.

Although many sociologists cite only a few kinds of traditions, the main opinion is that tradition is everything what a country represent in a positive light, whether it is something that existing years or centuries.

Russel Barsh, a noted scholar and commentator on the rights of indigenous peoples, argues: "What is 'traditional' about traditional knowledge is not its antiquity, but the way it is acquired and used. In other words, the social process of learning and sharing knowledge, which is unique to each indigenous culture, lies at the very heart of its 'traditionality'. Much of this knowledge is actually quite new, but it has a social meaning and legal character, entirely unlike the knowledge indigenous peoples acquire from settlers and industrialized societies".¹²

Traditional and indigenous knowledge has been used for centuries by indigenous and local communities under local laws, customs and traditions, and it has been transmitted and evolved from generation to generation.¹³ The importance of tradition for its creators and for the world community at large, and the need to foster and protect such knowledge, has gained growing recognition in international sense. Namely, we have to protect what belong to us, as our food, drinks, natural medicaments and other products and knowledge, before someone use it like indicators of their society. While, the right knowledge about the tradition is necessary. Thus, it is important to insist on the true values, healthy food, traditional music¹⁴, dance, joy, specific national costumes and the like.

4. TRADITIONAL KNOWLEDGE PROTECTION

Several proposals have been made, within and outside the IPRs (Intellectual Property Rights) system, to "protect" traditional knowledge, where protection essentially means to exclude the unauthorized use by third parties. Protecting a peoples' culture means maintaining those conditions that allow a culture to thrive and develop further.¹⁵ The protection of traditional wealth may provide a means to achieve different objectives. The protection, in many cases, has non-economic purposes, such as a moral recognition of the authorship and the like. The solutions to the protection of traditional knowledge in the IPR law may be sought in terms of (Dutfield, 2003 & Twarog, 2004).¹⁶

- Positive protection - refers to the acquisition by the TK (traditional knowledge) holders themselves of an IPR such as a patent or an alternative right provided in a sui generis system.

¹² Suthersanen, U. (2007). *Traditional Knowledge and Traditional Cultural Expressions*. London, UK: Queen Mary - University of London.

¹³ Correa, M.C. (2001). *Traditional Knowledge and Intellectual Property*. Geneva, Switzerland: Quaker UN Office.

¹⁴ Miletić, A. & Cvetković, J. (2017). Perception and interpretation of traditional and contemporary music in the teaching musical literacy. *Twelfth International Scientific Conference Knowledge without Borders, Vrnjačka Banja, Serbia*. Skopje: IKM. *International Journal Scientific Papers*, 16.2, 921-927.

¹⁵ Dutfield, G. (1999). Rights, Resources and Responses. In: Posey, D.A. (Ed.), *Cultural and Spiritual Values of Biodiversity* (pp. 503-546). Nairobi, Kenya: UNEP.

¹⁶ Dutfield, G. (2003). *Protecting Traditional Knowledge and Folklore*. Geneva, Switzerland: ICTSD & UNCTAD; Twarog, S. (2004). Preserving, Protecting and Promoting Traditional knowledge: National Actions and International Dimensions. In: Twarog, S. & Kapoor, P. (Eds.), *Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions* (pp. 61-70). New York and Geneva: UN.

- Defensive protection - refers to provisions adopted in the law or by the regulatory authorities to prevent IPR claims to knowledge, a cultural expression or a product being granted to unauthorized persons or organizations. A main tool for defensive protection is requiring relevant patent applications to include disclosure of the source of genetic resources and associated TK.

Many TK-holding communities complain that their knowledge and cultural heritage are treated as common property and as free for commercial use by anyone anywhere, and logically such use is not patented, and therefore some protection measures such as those outlined above would have little impact.

It is important to mention here that positive protection measures may also serve to provide defensive protection and vice versa. The distinction between the two, then, is not always clear-cut.¹⁷

Traditional knowledge protection focuses on the use of knowledge such as traditional technical know-how, or traditional ecological, scientific or medical knowledge, the content or substance of traditional know-how, innovations, information, practices, skills and learning of TK systems such as traditional agricultural, environmental or medical knowledge. These forms of knowledge can be associated with traditional cultural expressions - folklore, such as songs, chants, narratives, motifs and designs.¹⁸ Just for helping people to understand what really needs to be protected, here are a few examples of traditional knowledge (Table 2).

Table 2. Some examples of traditional knowledge

❖ Thai traditional healers use plao-noito treat ulcers
❖ The San people use hoodia cactus to stave off hunger while out hunting
❖ Sustainable irrigation is maintained through traditional water systems such as the aflajin Oman and Yemen, and the qanat in Iran
❖ Cree and Inuit maintain unique bodies of knowledge of seasonal migration patterns of particular species in the Hudson Bay region
❖ Indigenous healers in the western Amazon use the Ayahuasca vine to prepare various medicines, imbued with sacred properties

Source: WIPO. (2018). *World Intellectual Property Organization*. Geneva, Switzerland: WIPO.

Problem confronting TK holders is the commercial exploitation of their knowledge by others, which raises questions of legal protection of TK against misuse, the role of prior informed consent, and the need for equitable benefit-sharing.¹⁹ A lack of experience with existing formal systems, the limited economic resources or cultural factors, a lack of a unified approach, and, in many cases, a lack of clear national policy concerning the utilization and protection of TK, as well as the disadvantages in using existing IPRs mechanisms, and, at the same time, a lack of understandable and clear rules concerning the appropriate use of TK, create areas of uncertainty for those seeking to use TK in research and development of new products. Because of these facts, there is exists a need for well-established, culturally appropriate and predictable rules, both for the holders and the legitimate users of TK.

The TRIPS Agreement (The World Trade Organization's Agreement on Trade-Related Aspects of Intellectual Property Rights) sets out minimum standards for a number of IPR instruments (patents, trademarks, copyright, etc.) to protect industrial-type intellectual property, and this type of knowledge is predominantly held in developed countries. Some 95% of patents are in developed countries, and a large proportion of the 5% in developing countries is held by developed-country companies.²⁰ On the other hand, developing countries are endowed with TK. The nature of this knowledge makes much, if not most, of it difficult to protect using the conventional IPR instruments required by the TRIPS Agreement, so there exists an imbalance whereby the knowledge predominant in developed countries is protected, but that is not case with developing countries.

5. SERBIAN TRADITIONAL KNOWLEDGE

Traditional knowledge (TK), genetic resources (GRs) and traditional cultural expressions (TCEs, or "expressions of folklore") are economic and cultural assets of indigenous and local communities and their countries.²¹

Serbia is known as a country of healthy foods, has an abundance of natural resources, rich history and tradition. Its geographical location and climate create an excellent opportunity to address agricultural production, not only in the

¹⁷ *Ibid.*

¹⁸ WIPO. (2018). *World Intellectual Property Organization*. Geneva, Switzerland: WIPO.

¹⁹ *Ibid.*

²⁰ Twarog, S. (2004). *op. cit.*

²¹ WIPO. (2018). *op. cit.*

first phase, but in the higher stages of processing. This is what should be a base of the future agribusiness development in Serbia: improvement in agricultural production and food processing (for example, produce raspberries and make ice cream or juice of them, etc.). Only this kind and organization of production can make a higher profit and similar benefits. Unfortunately, the Serbian food products are mainly due to the foreign market in the first stage of processing, which is the cheapest and not profitable. Therefore, it is necessary with the help of the subsidies to farmers and the other supports, to allow domestic investors favorable conditions to organize agricultural production and food processing. Thereby, very important issues are the traditional knowledge using and registration of products as geographical indications, not only nationally but also internationally. Namely, many products are protected at the national level, but the importance of performing their rights and recognition of their registration in the foreign market is visible. Besides food and natural resources, Serbia is known for its folklore, especially lavish national costumes, which have special characteristics depending on the areas to which they belong. Also, Serbian schools are part of the cultural wealth. Obviously, Serbia is a country with a rich tradition (Table 3) and the history, which have to be protected.

Table 3. Some important elements of tradition in Serbia

Element of tradition	Description
Hospitality	friendly approach; openness; rural life, family relationship; festivals and celebrations
Arts & Culture	music; folklore; poetry; etc.
Orthodox Christianity Religion	"slava" - every family has their own patron saint that they celebrate on the feast day ; "kumstvo" - great respect for godfathers; "zapis" - every tree in Serbia that is sacred for the village within whose bounds it is situated; Easter; Christmas; etc.
Food & Drinks	traditional agriculture; rural products

Source: Authors' research

Many products based on traditional knowledge (TK) are important sources of income, food and health care for large parts of the populations of a number of developing countries.²² Thereby, the agricultural production and food processing, especially healthy food, based on TK, are important opportunities for Serbia.

The Serbian agriculture and food processing have a long tradition, experience and good quality, then an abundance of natural resources for the popular organic production and processing, but these sectors are not completely modernized. Basically, everything is done on traditional way, especially on the small farms.

Serbian traditional knowledge contributes way to put healthy, traditional food on the table, which "cries out" many people in the world. So, why not be protected traditional knowledge? This is what Serbia should be proud and realize economic benefits on the world market.

Geographical indications are used for marking natural, agricultural, industrial, domestic products and services, so it is necessary to take advantage and make the entire collection of registered Serbian dishes, which will be served in the restaurants close to all major cultural and historical places, etc. It could protect Serbian grandmothers' recipes for making cheese, bread, etc. This traditional knowledge may bring the economic success and independence in the future. It should be seen as a national treasure and protected from appropriation by third parties. Some of the IPRs issues, in this context concern the patenting of inventions that use traditional knowledge and whether traditional knowledge should be protected through its own sui generis system of IPRs. Also, it is very important for the domestic products on the market, especially fruits (plum, raspberry, etc.) the names of agricultural products protect by intellectual property rights, using the farm or farmer's name.

6. CONCLUSION

The Republic of Serbia is a country with outstanding natural resources and tradition, especially related to the agro-food production. Therefore, worthy of the brand is to develop and stimulate products with exceptional quality and traditional knowledge. An adequate system of protection of geographical indications, which complies with the EU and other world standards, could be a significant economic potential for sustainable development of agriculture and food sector as a whole, for adequate **protecting** traditional knowledge and folklore. Serbia has a lot of products and traditional knowledge, which have to be protected. Geographical indication of origin is one way of maintaining

²² Zhang, X. (2004). Traditional medicine: its importance and protection. In: Twarog, S. & Kapoor, P. (Eds.), *Protecting and Promoting Traditional Knowledge: Systems, National Experiences and International Dimensions* (pp. 3-6). New York and Geneva: UN.

national traditional values (knowledge etc.). Nevertheless, Serbia has a great potential to build the brands based on organic production and traditional knowledge. Generally, the natural resources, cultural and historical heritage, traditional knowledge, folklore, healthy food and similar values, have to be supported and protected, especially in the rural areas where the traditional knowledge, food and folklore have some deeper meaning.

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