

## CONDITIONS AND TRENDS OF THE DEVELOPMENT OF THE ECOLOGICAL AGRI-FOOD MARKET IN ROMANIA IN PANDEMIC CONDITIONS

Marian CONSTANTIN<sup>1</sup>, Raluca NECULA<sup>2</sup>, Iulian DRAGHICI<sup>3</sup>

**Abstract.** *In the current stage of the pandemic period, the use of SWOT analysis becomes a specific for investigating and assessing the situation of the organic agri-food market. The paper follows the structural specificity of the SWOT method. The aspects captured can be considered challenges in the area of organic agri-food market with references to the general framework of economic development through interpretative forms that were reproduced: at territorial level (local, regional and national form), along with the aspect of their importance (primary, secondary and auxiliary). At the same time, the bivalence of knowing the influence of the pandemic on the impulses of the ecological agri-food market was considered by: the quantitative aspect (which referred to the capture of the structural conditions nominated by the SWOT analysis) and the qualitative aspect (through which the manifestation of the conjunctural relations in the chain of the ecological agri-food market to be framed by degrees of intensity). The set of conditions presented foresees the tendency to introduce cyber mechanisms that can be appropriate forms of knowledge of some challenges signaled by the use of SWOT analysis. This is because the contouring of the feedback circuits through which the output sizes of the regulated system act differently on the regulatory system and in the current situation of the ecological agri-food market in pandemic conditions. By performing/transposing the coordinates specific to the SWOT analysis, the problems investigated can be identified by the agents themselves interested in the market. The explanatory extension provided by the SWOT analysis showed that even in the current situation of the organic agri-food market in pandemic conditions, the existence of a structural delimitation can also be represented by a cybernetic system [Ecological market level (pandemic conditions) =  $f(S, W, O, T)$ ]. It appears the existence of a high degree of uncertainty on the market. The correlative set of the four parameters can be expressed mathematically in a generic functional form of the type  $\rightarrow \square + S \cdot W \cdot O / T$ ). Even in pandemic conditions, according to this mathematical correlative formulation: strengths and weaknesses represent what exists, respectively the challenges posed by these parameters considered: descriptive, respectively impulses of organic agri-food market functions, and opportunities and threats reflect what should be had in view, in the options involved in the mechanisms of market functioning.*

**Keywords:** SWOT analysis, strengths, weaknesses, opportunities, threats. ecological market, pandemic (COVID-19 crisis), agro-ecological vocation

---

<sup>1</sup>Prof. PhD., University of Agronomic Sciences and Veterinary Medicine Bucharest, Corresponding member of the Academy of the Romanian Scientists, Bucharest, Romania ( e-mail: marianconstantin2014@yahoo.com)

<sup>2</sup>Lecturer Ph. D., University of Agronomic Sciences and Veterinary Medicine Bucharest, Romania ( e-mail: raluca\_nec@yahoo.com)

<sup>3</sup>Ph.D. University of Agronomic Sciences and Veterinary Medicine Bucharest, Romania.

## 1. Introduction

In the current stage of the pandemic period, the use of SWOT analysis becomes a specific method of investigation and assessment and to know the situation of the organic agri-food market. The aim of the paper was to present this problem through the specific structural elements of the SWOT method.

The captured aspects can be considered challenges within the area of the ecological agri-food market with references on the general framework of economic development: at territorial level, together with the aspect of their importance (main, secondary and auxiliary) [15].

At the same time, the bivalence of knowing the influence of the pandemic on the impulses of the ecological agri-food market was considered through: the quantitative side (through the methodological structures of the SWOT analysis) and the qualitative side (through which the conjuncture relations framed by degrees of intensity) [2].

By performing/transposing the specific coordinates of the SWOT analysis, problems investigated or even initially outlined can be identified by the agents themselves interested in the market.

## 2. Materials and methods

Adequate to highlight the current situation of the organic agri-food market in pandemic conditions in the paper was used a methodological form expressed by SWOT analysis.

Answers were sought in the form of explanatory and tabular texts with reference to the knowledge of objective and subjective causes that acted on the mechanism of this market of organic agri-food products in the three main stages of the chain but appropriate to the area of existence of the crisis COVID-19 .

The forms of information were paraphrased by SWOT analysis according to the name and structural classification using abbreviations given by the following terms [1] [4]: Strengths, qualities that in market conditions may be tangible or intangible that, allowing it to perform its functions; Weaknesses, which are the elements that prevent the fulfillment of market functions (which can be minimized or eliminated); Opportunities, the conditions under which the organic agri-food market can benefit in order to become more profitable (competitive advantage from capitalizing on opportunities) for economic operators in the supply chain; Threats, extremely dangerous environmental conditions which may jeopardize on the one hand the proper functioning of the market (through its mechanisms) and, on the other hand, the profitability of economic operators (with regard to their stability and survival).

Methodologically, a structural delimitation was used in the whole paper, which can be given by a cybernetic system [9], [12] Ecological market level (pandemic conditions) =  $f(S, W, O, T)$ . It was found the existence of a high degree of uncertainty on the market, which is why the correlative set of those parameters can be expressed mathematically in a generic functional form of the type  $\rightarrow (+ S - W \cdot O/T)$ . In this mathematical formulation the strengths and weaknesses represent what exists, respectively the level of these parameters considered descriptive for the organic agri-food market, and the opportunities and threats reflect what will be and is considered, the choices to be made by the people involved in the planning process [3] [4] [10, 11, 13].

Structurally-synthetically, the study aimed to capture/signal those conditions through the territorial background of pandemic manifestation through the problems outlined by the SWOT methodology, in the trivalence of the flow of the main stages of the ecological market (production-distribution-consumption), to outline/substantiate the most appropriate market strategies.

### **3. Results and discussions**

The paper seeks to outline the realization of assumptions for the current situation of the organic agri-food market on which in the conditions of pandemic manifestation at present the knowledge in this field is less detailed.

In this respect, the SWOT analysis is a real tool through which the overall analysis of the position of the organic agri-food market in the current conditions of the COVID-19 crisis can be made. The challenges arising from the SWOT analysis can assess the internal potential and the limits of possible opportunities / threats from the external environment, thus being able to outline the most appropriate strategies of the organic agri-food market in pandemic conditions [9].

Thus, for the current and perspective knowledge of those links (SWOT) adapted to the flow of the ecological agri-food market, investigations were carried out in which the study followed: the response reactions/challenges that were presented at the level of the territorial structure (by local, regional and national form ) through a micro and macro territorial level (the interpretative forms being rendered territorially through the local, regional and national form), but also of the degree of importance of these conditionings (main, secondary, auxiliary).

#### **3.1. Conditionings of the ecological production system according to the SWOT analysis**

Were outlined based on the structure of local, regional and national areas but also according to the territorial vocation. Indeed, in the conditions of the pandemic, the

structure of the conditionings was deepened in a form specific to the vocation of the sphere of the territorial ecological production system (territorial, economic and social agro-ecological) and which are presented succinctly in Tables 1-a and 1-b.

**Table 1a.** Ecological production system conditions rendered by SWOT analysis (strengths, opportunities)

The internal environment	Manifestation activities	External environment
Strengths		Opportunities
1. The presence on the Romanian territory of all forms of relief - mountains, hills, plateaus, depressions, valleys and plains; agroecosystems suitable for all organic production systems; balanced ratio as area between the main landforms.	Territorial agro-ecological vocation	Taking advantage of local, national and international economic situations; the introduction and application of structural and functional forms favorable to organic farming systems, the intensification of measures to implement the CAP to green agriculture;
2. Continuous growth of the surface of agricultural land and arable land cultivated in ecological system; zoning of organic production, corresponding to the supply of soil, climate and specialized labor force; subsidies/aid for organic farming; conversion support; low level of chemical fertilizers.	Economic	Subsidizing organic agricultural production; increasing and diversifying demand; the multifunctional character of ecological systems; improving technologies for the use of renewable energy sources; stimulating agricultural workers returning home from the diaspora; setting up financial instruments for small farms and agricultural SMEs; financing the modernization of canneries
3. Simplification of the CAP and flexibility measures, the existing level of the agricultural workforce; the existence of experience in organic farming and their desire to improve their knowledge; direct support for farmers and rural areas (loans or guarantees to cover operating costs, flexibility in the use of financial instruments dedicated to rural development; increase in advance payments	Social	The large number of organizations and individuals involved in organic farming; cheap labor; exchange of information / knowledge and experience; variation in the degree of COVID -19 infestation and the incidence of other incurable human diseases that will increase the demand for organic products; increasing people's living standards; intensifying movements for healthy eating; increasing the number of research and innovation programs and projects on organic farming;

Source: [4], [5], [6], [7], [8], [12], [14].

**Table 1b.** Ecological production system conditions rendered by SWOT analysis (weaknesses, threats)

<b>The internal environment</b>	<b>Manifestation activities</b>	<b>External environment</b>
<b>Weaknesses</b>		<b>Threats</b>
1. Degradation of cultivated agricultural lands in ecological system; diminishing biodiversity; non-compliance with production activities in compliance with the objectives of the Technical Inspection in the field of organic farming. Deficient aspects in the collection of organic horticultural products, can be included in a specialized aspect that can be added from specialized farms in companies for processing that are related to: financial difficulties of factories; low demand for canned vegetables and fruits; competition from imported products; the low quality of canned vegetables and fruits and their poor promotion; reduced exports of canned vegetables and fruits to foreign markets.	Territorial agro-ecological vocation	Global warming above the normal limit; increasing the frequency and intensity of extreme weather events; the sometimes-irreversible change in the composition of flora and fauna.
2. Small areas under organic farming, inputs and technologies inadequate to organic farming rules; delivery of small and inhomogeneous quantities of organic products, obtained on areas with low yields.	Economic	The financial recession and its symptoms; contamination of organic agricultural and food products with genetically modified organisms and pesticides, economic fraud.
3. Labor force at a lower and lower level, the high level of self-consumption of organic production corresponding to the particularities of organic agriculture and the cultivation area; date sources; lack of professionalism in administration in all forms of education; the existence of the potential to be developed in organic farming; lack of initiatives in setting up non-governmental organizations in this field.	Social	Aging of agricultural producers; depopulation of villages and communes; the sharp decrease / disappearance of the number of small farms; bureaucracy in administrative and control structures, profile; declining consumer confidence in organic farming; the negative attitude of some representatives of the media and conventional agriculture; European legislation for organic production; the policy of supporting producers which did not always have the expected effects; non-compliance by operators with the rules on production, processing, packaging, transport, storage, distribution and import from third countries of organic products; lack of operator documents, respectively of mandatory registrations; supporting the digitization of the sale of production by small farmers; additional and more flexible funding for short chain cooperation projects.

Source: [4] [5] [6] [7] [8] [14].

### 3.2. Regarding the conditions for the distribution of organic production

The SWOT analysis is considered to be of particular importance in the organic market. It can be said that even in the conditions of the pandemic an analysis in this phase of distribution is focused on degrees of importance of the main secondary and auxiliary activities. The flow of activities for the current conditions can be detailed by coordinates that are summarized in Table 2-a and 2-b.

**Table 2a.** Conditions for the distribution of ecological production rendered by SWOT analysis (strengths, opportunities)

The internal environment	The activities intensity degree	External environment
<b>Strengths</b>		<b>Opportunities</b>
1. Growing demand for organic products in the EU; expanding the capacity of zonal markets for national agri-food products; structurally-organizationally adapted forms of wholesale markets for forms of distribution	Main	1. The trend of setting up a "green hall"; developing retail markets through which market segments can expand; increasing the demand for quality in green markets; creating / maintaining an efficient organic food supply chain; fiscal facilities in case of creating a large number of jobs and obtaining non-reimbursable financing; elaboration and implementation of programs to promote the consumption of ecological products; a strategic location of access to the green markets that have been subjected to the pandemic; capitalizing on market opportunities / proposals that can be included in EU rules
2. An increasing degree of sales force liberalization; the possibility of implementing the current forms but also of some adequate forms of distribution of ecological products; the existence of a wide range of market outlets that farmers can turn to; implementation of specific forms in retail distribution; certain possibilities to expand the area of the organic market to other urban areas or crowded centers; organization of marketing cooperatives, but also of encouraging a number of forms of distribution; amplifying the range of products offered to consumers; construction of warehouses for the storage of perishable ecological products; the existence of already organized marketing systems for organic products	Auxiliary	2. Rhythmic supply of the market with ecological products through which speculative intermediaries can be eliminated; entering a new or still unexploited market; possibilities for setting up collection centers; capitalizing on opportunities in the foreign market; the existence of a short market channel; possibilities to update the door of an existing contracting system according to the current conditions; reducing the number of field inspections

Source: [4] [5] [6] [7] [8] [14].

**Table 2b.** Ecological production distribution conditions rendered by SWOT analysis  
(weaknesses, threats)

<b>The internal environment</b>	<b>The activities intensity degree</b>	<b>External environment</b>
<b>Weaknesses</b>		<b>Threats</b>
1. Low level of labor, poorly qualified management; outdated equipment; disproportionate production capacities of large distributors / processors; some organic products have deficient trade balances; the major lack of orientation towards certain market forms of many producers; low economic performance; the lack of a stable collection system	Main	1. Prolongation of the pandemic period that will influence the economic crisis; deficiencies in compliance with quality standards; changes in tax legislation related to a low predictability of the business environment; existing deficiencies in the creation and operation of marketing infrastructures; the loss of foreign markets and the reduced capitalization of Romania's potential
2. Organic products obtained in farms are intended primarily for self-consumption; small quantities of organic products still sold for processing to collection centers; the situations of market movements created by the pandemic generate competitiveness is reduced compared to competition from imported products;	Secondary	2. Poor organization of agricultural markets, lack of information on export opportunities; deficient structure of exports of organic products; the penetration of imports into the internal ecological market; the financial blockage present on the entire supply chain; diminishing the purchasing power of consumers; formation / existence of a distribution channel too long; competition from supermarkets; threatening small producers by expanding hypermarkets.
3. Existence of unused spaces; inappropriate behavior of distributors with the agricultural producer and consumer; the absence of programs for the marketing of organic products in pandemic conditions; partial or total non-application of EU regulations	Auxiliary	3. Fragmentation of the wholesale distribution system; instability of the internal supply; competition through the import of organic agri-food products; a lower level of retail prices for small-scale organic products

Source: [4] [5] [6] [7] [8] [14].

### 3.3. Regarding the conditioning of the consumption of the ecological production according to the SWOT analysis that is permanently manifested within the agri-food chain.

It can be nominated as one of the most important stages and for the conditions of the pandemic period. The delimitation given by the SWOT structure at which a deepening is performed through the main, secondary and auxiliary framing degrees.

Such an analysis of the consumption of organic production for the current conditions of the COVID -19 crisis can be delimited by coordinates that are summarized in Table 3-a and 3-b.

**Table 3a.** Conditioning the consumption of organic production according to the SWOT analysis (strong bridge, opportunities)

The internal environment	The activities intensity degree	External environment
Strengths		Opportunities
Increasing demand for green pandemic consumption in the EU; raising consumer awareness of the consumption of organic products	Main	Changes in consumer preferences; development of access infrastructure for ecological products; tax facilities in case of creating a large number of jobs; favored consumption as a result of obtaining non-reimbursable financing; entering new markets or markets not yet exploited;
The rules of social distance applied during the pandemic; improvements in the forms of organic agri-food consumption.	Secondary	The tendency to increase consumption focused on forms of behavior; enhancing the "cleaner production" approach; increase the volume of purchases
The motivations arising from the diversification of the forms of consumption of ecological agri-food products in the conditions of the pandemic; possibilities for the consumer to investigate the markets	Auxiliary	Amplified availability in the consumption of organic products; imposing requirements on the certification of organic products by consumers; development of ecological tourism potential; new forms of consumer purchase of products; expenditures for organic agri-food products; the definite trend of online shopping growth;

Source: [4] [5] [6] [7] [8] [11] [14].

**Table 3b.** Consumption conditions of organic production according to SWOT analysis  
(weaknesses, threats)

<b>The internal environment</b>	<b>The activities intensity degree</b>	<b>External environment</b>
<b>Weaknesses</b>		<b>Threats</b>
Relatively low level of investment in the trade of medium-sized organic products; lack of coordination in consumer behavior of organic products; limitations created by consumer behavior to develop viable project proposals.	Main	Difficulties in supporting the investment costs of the projects: organizational, political and financial nature; manifestations reported in the supplier-customer relationship inconsistent with the forms of organization included in the EU Directives
Relatively low level of investment in the retail network; the limited capacity of actual consumers to develop viable project proposals;	Secondary	Increased pressure through consumer behavior on biodiversity and quality of agri-food products; the possibility of high cost levels; inappropriate use of EU funds; changes in consumer preferences;
Partial lack of state interventions in / through improper practice of ecological terms; the non-existence of the establishment of contraventions for acts of fraud in the control-consumption relationship	Auxiliary	Partial/total lack of cross-sectoral communication and coordination in consumption; the impossibility of securing and controlling the consumer's purchases on the market.

Source: [4] [5] [6] [7] [8] [11] [14].

It follows the need to know events, actual operation of the production, distribution and consumption which surprised SWOT analysis and national pandemic conditions, those specific response elements in the food market flow.

Regarding the conditions captured in the market of organic agri-food products in Romania, it can be said that they are directly related to the forms and intensity of the instability of the pandemic period. But at the same time there is a need to follow the very forms of existence and intensity of the COVID-19 crisis (in line with the level of relaxation of restrictive measures).

Respectively, following the manifestations of the consumer's behavior of organic agri-food products, it can be outlined through forms of scenarios. These and in the case of organic agri-food consumption systems in pandemic condition, it can be presented by adapting those in the specialty literature [11]:

- return to normal (with reference to the level of expenditures that may remain unchanged in pandemic conditions);

- cautious, but extravagant (spending is higher in areas considered more important for high-income consumers);
- maintaining an economic level (where consumer spending is pessimistic about the future);
- continuing to reduce costs (consumers make spending cuts because the greatest risk could be represented by job loss);
- the return to a high employment potential of the young generation (currently there is optimism even if food consumption has been disrupted in their daily lives).

### **Conclusions**

The aim of this paper was to highlight a possible knowledge of the short-term level of the market for organic agri-food products in the event of a pandemic (created by the COVID-19 crisis).

(1) Structurally methodologically through the SWOT analysis, references were made to: (i) delimiting the strong points that can be transformed into competitive advantages; (ii) weaknesses that need to be identified in a causal and attenuated analytical form; (iii) opportunities from the external environment to be exploited in the market area; (iv) identifying threats at the right time to enable strategies to respond or adapt to the environment of the organic agri-food market and in pandemic conditions.

(2) In the realization/transposition of the coordinates specific to the SWOT analysis, the investigated problems for the ecological agri-food market in pandemic conditions it is necessary to know the following tendencies: (i) the tendency to extend the favorable form of strengths; (ii) the tendency to diminish/ hide weaknesses; (iii) the possibility of assimilation and/or confusion between the optimistic sides regarding the strengths/opportunities and the pessimistic ones regarding the weaknesses/threats; (iv) performing the SWOT analysis which must be permanently correlated with the actual desire for action.

(3) From the conditions presented, trends can be outlined for the application and in the case of the organic agri-food market, being suggested that the SWOT analysis be accompanied by SMART objectives. They can be reproduced according to the following structure (which may be appropriate even in pandemic conditions): specific; measurable; affordable / accessible; relevant; term of execution.

(4) The synthetic opinions on consumer behavior presented in the scenarios form highlight the possibility of predicted forms of consumption level that may occur in the agri-food market for organic products. By introducing cyber mechanisms into all these conditionings, appropriate forms of knowledge of emerging trends can be established using SWOT analysis.

## REFERENCES

- [1] Analiza SWOT (SWOT Analysis), <https://conspecte.com/management/analiza-swot.html>, Accessed on Sept. 20, (2020).
- [2] Avdonina, I., Kholopova, J., Dozorova, T., Tarasova, E., Management of grain production in modern conditions, BIO Web Conf. Volume 17, 2020, [https://www.bioconferences.org/articles/bioconf/full\\_html/2020/01/bioconf\\_fies2020\\_00112/bioconf\\_fies2020\\_00112.html](https://www.bioconferences.org/articles/bioconf/full_html/2020/01/bioconf_fies2020_00112/bioconf_fies2020_00112.html), Accessed on Sept.20, (2020).
- [3] Buliga, Z., Stoleru, V., Inițiativa de marketing pentru produsele agricole ecologice (Marketing initiative for organic agricultural products), <https://documente.net/document/initiative-de-marketing-pentru-produsele-agricole-publicatebrosurapdf-modul.html>, Accessed on Sept.20, 2020 (2009).
- [4] Constantin, M., Explanatory dictionary of agro-marketing, Academy of the Romanian Scientists Publishing House, Bucharest (2020).
- [5] Egeea, M., European Green Pact, CE prepares new initiatives for organic agriculture, <https://www.secundatv.ro/externe/pactul-verde-european-ce-pregateste-noi-initiative-pentru-agricultura-ecologica-175591.html/>, Accessed on Sept.20, (2020).
- [6] European Commission, Jobs and economy during corona virus pandemic, [https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic\\_ro](https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic_ro), Accessed on Sept. 20, (2020).
- [7] European Commission, Communication of the Commission to the European Parliament, [https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic\\_ro#asigurarea-aprovizionarii-cu-alimente-eseniale](https://ec.europa.eu/info/live-work-travel-eu/health/coronavirus-response/jobs-and-economy-during-coronavirus-pandemic_ro#asigurarea-aprovizionarii-cu-alimente-eseniale), Accessed on Sept.20, (2020).
- [8] European Commission, Priorities and Goals, [https://ec.europa.eu/info/priorities-and-goals\\_ro](https://ec.europa.eu/info/priorities-and-goals_ro), Accessed on Sept.20, (2020).
- [9] Naja, F., Hamadeh, R., Nutrition amid the COVID-19 pandemic: a multi-level framework for action, Journal List Nature Public Health Emergency Collection, Eur J Clin Nutr April 20, 1-5. PMC7167535; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7167535/>, Accessed on Sept.20, (2020).
- [10] Necula, R., Stoian, M., Drăghici, M., The main indicators analysis that characterize the food consumption evolution in Romania in comparison between the period 2001-2006 and 2007-2014, In: Agrarian Economy and Rural Development - Realities and Perspectives for Romania. 6th Edition of the International Symposium, The Research Institute for Agricultural Economy and Rural Development (ICEADR), Bucharest, pp. 246-253 (2015).
- [11] Oancea, D., Pandemic changes consumption rules, <https://www.zf.ro/companii/retail-agrobusiness/pandemia-schimba-regulile-consumului-studiu-ey-consumatorul-roman-19431811>, Accessed on Sept.20, (2020).
- [12] Order no. 688 of 9 August 2007, for approving the Rules regarding the organization of the inspection and certification system, inspection, certification, supervising and control bodies (2007).
- [13] The European Council regulation, The world of organic agriculture - Statistics and Emerging trends, International Federation of Organic Agriculture Movements, EEC 2092/1991 (2006)
- [14] Toderița, A., CREPE Analysis. How could we assure food security of Romania during the pandemic. The role of the small and middle sized farms, <https://www.contributors.ro/analiza-crpe-cum-asiguram-securitatea-alimentara-a-roman>, Accessed on Sept.20, (2020).

- [15] Toncea, I., Practical guide for organic agriculture (Ghid practic de agricultură ecologică). Editura Academic Press, Cluj-Napoca (2002).
- [16] Carey, M, Molden, O. C., Rasmussen, M. B., Jackson, M., Nolin, A.W., Mark, B.G. Impacts of glacier recession and declining meltwater on mountain societies. *Annals of the American Association of Geographers*, Vol. 107(2), 350–359, (2017).
- [17] Dame, J., Nüsser, M. Food security in high mountain regions: Agricultural production and the impact of food subsidies in Ladakh, Northern India. *Food Security* Vol. 3(2), 179–194, (2011).
- [18] Debarbieux, B., Price, M. Representing mountains: From local and national to global common good. *Geopolitics*, Vol. 13(1), 148–168, (2008).
- [19] European Commission, Mountain Areas in Europe: Analysis of mountain areas in EU member states, acceding and other European countries. Nordregio, (2004).
- [20] European Commission, Council Regulations no. 6/2002 of december 12, (2001).
- [21] Eurostat, <https://ec.europa.eu/eurostat>
- [22] FAO (Food and Agriculture Organization of the United Nations), 2015, Classification of the mountain area.
- [23] Gleeson, E. H., Wymann von Dach, S., Flint, C. G., Greenwood, G. B., Price, M.F., Balsinger, J., Nolin, A., Vanacker, V. Mountains of our future: Defining priorities for mountain research. A synthesis from the 2015 Perth III conference. *Mountain Research and Development*, Vol. 36(4), 537–548, (2016).
- [24] Nüsser, M., Schmidt, S., Nanga Parbat revisited: Evolution and dynamics of socio-hydrological interactions in the northwestern Himalaya. *Annals of the American Association of Geographers*, Vol. 107(2), 403–415, (2017).
- [25] Rey, R., (coord.), A vision of sustainable development - mountain - focused on capitalizing on "mountain products", quality. Increasing the importance of mountain areas in the post-coronavirus conjuncture, Mountain Economy Center of the Romanian Academy (O viziune de dezvoltare sustenabilă – montană – axată pe valorificarea "produselor montane", de calitate. Creșterea importanței zonelor montane în conjunctura post-coronavirus, Centrul de Economie Montană al Academiei Române), (2020).
- [26] Rasul, G., Hussain, A., Mahapatra, B., Dangol, N. Food and nutrition security in the Hindu Kush Himalayan region. *Journal of the Science of Food and Agriculture* Vol. 98(2), 429–438, (2018).
- [27] Romeo, R., Vita, A., Testolin, R., & Hofer, T. Mapping the vulnerability of mountain peoples to food insecurity. Rome: FAO, (2015).
- [28] Tiwari, P. C., Joshi, B. Natural and socio-economic factors affecting food security in the Himalayas. *Food Security* Vol. 4(2), 195–207, (2012).
- [29] Trading economics, <https://tradingeconomics.com/forecasts>
- [30] United Nations. Transforming Our World: The 2030 Agenda for Sustainable Development. Resolution adopted by the General Assembly on 25 September 2015, (2015). [http://www.un.org/ga/search/view\\_doc.asp?symbol%4A/RES/70/1&Lang%4E](http://www.un.org/ga/search/view_doc.asp?symbol%4A/RES/70/1&Lang%4E); Accessed on 14 February 2018.
- [31] Wymann von Dach, S., Mountain products and market development. 58-59, (2013).
- [32] Zuliani, A., Esbjerg, L., Grunert, K.G., Bovolenta, S. Animal Welfare and Mountain Products from Traditional Dairy Farms: How Do Consumers Perceive Complexity? *Animals* Vol. 8(207), (2018).