

DISINFORMATION, MISINFORMATION AND THE AGRI-FOOD SECTOR

DEZINFORMÁCIE A MISINFORMÁCIE V AGROPOTRAVINÁRSKOM SEKTORE

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I Introduction

Certain observable trends significantly influence the public discourse regarding information dissemination within society. Traditional authorities and established information channels are experiencing a gradual erosion of trust,⁽¹⁾ juxtaposed with the increasing popularity of alternative information sources or alternative media. The appeal of these alternative sources primarily rests on their perceived “courage” to challenge established facts, objectivity, and the minimal journalistic standards upheld by their traditional counterparts. The emergence of online platforms is undeniably a key catalyst⁽²⁾ for this paradigmatic shift, providing an accessible and unrestricted space for the dissemination of diverse opinions to the widest audience, without the ethical

and professional constraints inherent in traditional media outlets.

In such an environment, various forms of information proliferate, including disinformation, misinformation, and mal-information. Dretske's perspective, articulated decades ago, may diverge from this point of view, as he argued that disinformation, misinformation, and other forms of false information cannot be regarded as mere variations of genuine information, akin to considering a decoy or rubber duck as a type of duck.⁽³⁾ We will however refrain from addressing these issues within the framework of the “nuclear” sense of the term information, as proposed by Dretske.⁽⁴⁾ We approach the subject from more pragmatic grounds, which can be elucidated by examining data from the recent past,

1 Diaz (2017)

2 Rahmanian (2023)

3 Dretske (1982)

4 *Ibid.*

Abstract (EN)

This paper aims to assess the phenomenon of disinformation and misinformation within the agri-food sector, recognizing the growing concern articulated by global authorities. The significant proliferation of disinformation and misinformation underscores the need to scrutinize various sectors susceptible to its influence, with the agri-food sector identified as particularly vulnerable. Consequently, this paper explores instances of disinformation and misinformation within this field, highlighting its potential influence, prospective impacts, and risks to both the economy and inhabitants. Employing a deductive approach, the author introduces the concept of disinformation, discusses global risks, examines the vulnerability of recipients to (dis/mis)information, and provides specific examples of disinformation and misinformation within the agri-food sector along with its inherent consequences.

Keywords (EN)

disinformation, misinformation, fake news, agri-food sector, risks, global consequences

Abstrakt (SK)

Vnímajúc rastúce obavy z dezinformácií a misinformácií vyjadrené globálnymi inštitúciami, cieľom nasledujúceho príspevku je analyzovať fenomén dezinformácií a misinformácií v agropotravinárskom sektore tak v teoretickej, ako aj praktickej rovine. Šírenie dezinformácií a misinformácií je globálnym problémom a nevyhýba sa ani agropotravinárskemu sektoru, ktorý je z hľadiska svojich spoločenských funkcií obzvlášť zraniteľný. Tento článok preto skúma špecifické dezinformácie a misinformácie v tejto oblasti, pričom poukazuje na ich potenciálny vplyv, potenciálne dôsledky a riziká pre hospodárstvo, ako aj obyvateľov. Autor sa na základe deduktívneho prístupu odráža od definičného rámca pojmu dezinformácie a príbuzných konceptov, plynule prechádzajúc k diskusii o globálnych rizikách vo všeobecnosti, završujúc deduktívny prístup analýzou agropotravinárskeho sektora, poukazujúc na konkrétne dezinformačné a misinformačné kauzistiky ako aj ich praktické spoločenské dôsledky.

Kľúčové slová (SK)

dezinformácie, misinformácie, falošné správy, agropotravinársky sektor, riziká, globálne následky

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particularly during the Covid-19 pandemic. This period underscored the peril posed by the convergence of widespread access to online communication platforms, notably social networks, and the propensity to disseminate virtually any content, thereby precipitating a near-global catastrophe. Let us turn our attention to empirical evidence. Islam et al. cite a prevalent misconception that suggests the consumption of highly concentrated alcohol can disinfect the body and thereby eliminate the virus.⁽⁵⁾ Indeed, the practical ramifications swiftly demonstrated the fallacy of this widespread yet scientifically unfounded advice. Tragically, approximately 800 individuals lost their lives, 5876 were hospitalized, and 60 individuals suffered complete blindness as a consequence of consuming methanol in the mistaken belief that it could serve as a cure for the virus.⁽⁶⁾ Instances of disinformation and misinformation concerning public health, particularly in the context of vaccination against COVID-19, are regrettably not uncommon. Numerous notorious cases have emerged, highlighting the significant challenges posed by disinformation and misinformation in public health discourse. According to UNICEF, “43% citizens believe in a conspiracy theory regarding the concealment of information about vaccines.”⁽⁷⁾ Rumors and conspiracy theories are undeniably detrimental, as evidenced by a study conducted in China, which illustrates that “...belief in the conspiracy theories relevant to vaccines (not just the COVID-19 vaccine) had a significant negative impact on the Chinese public’s intentions to get vaccinated.”⁽⁸⁾ Vaccination has a lengthy history marked by persistent conspiracies, notably exemplified by the unsubstantiated link between MMR vaccination and autism.⁽⁹⁾ This misinformation has posed a significant threat to public health worldwide,⁽¹⁰⁾ leading to the resurgence of previously eradicated diseases and endangering thousands of individuals.⁽¹¹⁾ Disinformation, misinformation, and mal-information extend their impact beyond the realm of public health, permeating various domains across society.⁽¹²⁾ One recent example with significant societal implications is the USA presidential election campaigns leading up to the 2016 elections,⁽¹³⁾ as well as the Brexit campaign.⁽¹⁴⁾

These campaigns and instances, which heavily relied on disinformation and misinformation, are interconnected due to their substantial social impact and the risks they pose to various aspects of societal existence, including political and medical domains.⁽¹⁵⁾ The dissemination of false information, whether in the guise of disinformation or misinformation, has therefore garnered widespread global attention, prompting global institutions to increasingly recognize it as one of the foremost global threats.⁽¹⁶⁾ The General Assembly of the United Nations addressed the multifaceted challenges posed by disinformation by adopting Resolution 76/227, entitled “Countering disinformation for the promotion and protection of human rights and fundamental freedoms.” This resolution underscores the potential of disinformation to disrupt societal cohesion, undermine democratic processes, compromise public health initiatives, and encroach upon fundamental rights.⁽¹⁷⁾ The public’s perception aligns with this recognition of the issue’s gravity. According to findings from the Eurobarometer survey conducted in 2018, a substantial majority, comprising 83% of respondents, perceive fake news as a significant threat to democracy.⁽¹⁸⁾

As previously mentioned, our focus lies on a particular domain that we consider significant in its societal ramifications. Accordingly, in the subsequent sections, we aim to examine the occurrences of disinformation and misinformation within the agri-food sector. We have selected the agri-food sector primarily due to the increasing prominence of issues related to food safety and security. We contend that the ramifications of disinformation and misinformation within this specific domain can be profound, impacting not only the sector itself but also the broader society at large. Initially, it is prudent to provide concise definitions for the terminology pertaining to disinformation and its associated terms.

1 Disinformation and other types of lies

When discussing falsehoods disseminated through diverse networks and platforms, there exists a notable ambiguity in the terminology employed to delineate distinct categories of falsehoods, each with its unique characteristics. Hence, terms such as disinformation, misinformation, and mal-information, previously mentioned, are utilized. Although our paper primarily centers on disinformation and misinformation, it is imperative to elucidate the definitional distinctions

5 Islam et al. (2020)

6 Hassanian-Moghaddam et al. (2020)

7 UNICEF Montenegro (2021)

8 Yang, Luo, Jia (2021)

9 Davidson (2017)

10 Ali, Rubin, Sarkar (2021)

11 Hussain et al. (2018)

12 Staender, Humprecht (2022)

13 Persily (2017)

14 Bennett, Livingston (2018)

15 World Economic Forum (2013)

16 World Economic Forum (2024)

17 General Assembly of the United Nations (2022)

18 Eurobarometer (2018)

among these concepts. To achieve this goal, it is imperative to delineate the primary points of differentiation arising from volition and cognition. Henceforth, various permutations arise from the integration of volitional and cognitive elements. Among these, the most perilous manifestations entail deliberate fabrication and dissemination of falsehoods, often motivated by political or economic objectives. Such deliberate propagation of falsehoods is classified as disinformation, denoting the intentional dissemination of fabricated narratives aimed at causing harm to others.⁽¹⁹⁾ As delineated in the UNESCO handbook, disinformation refers to conscious endeavors aimed at perplexing or manipulating individuals by disseminating dishonest information. Unlike misinformation, disinformation poses a heightened threat due to its often-orchestrated nature, substantial resourcing, and reinforcement through automated technologies.⁽²⁰⁾ There exist additional characteristics that render disinformation notably perilous. It amalgamates elements from both propaganda and conventional news media to obfuscate its detection.⁽²¹⁾ As previously mentioned, disinformation deliberately endeavors to deceive individuals by presenting altered or fabricated information with the aim of manipulation. The motivations underlying the creation of false narratives vary, ranging from fostering chaos to potentially inciting violence.⁽²²⁾ While disinformation is often defined as fabricated or inaccurate information,⁽²³⁾ Fallis argues that it need not necessarily be entirely false; rather, it is sufficient for the information to be misleading.⁽²⁴⁾ In this context, it is conceivable that both perspectives hold validity, as disinformation can be understood either within a hierarchy as Wardle implies⁽²⁵⁾ or as a manifestation arising within specific contextual circumstances.⁽²⁶⁾

The second term frequently conflated with disinformation is misinformation. The critical distinction between them hinges on the intent of the originator. While disinformation is crafted and disseminated with malicious motives, misinformation possesses different characteristics. Likewise, akin to disinformation, misinformation is characterized as inaccurate or misleading information, as per the Merriam-Webster dictionary,⁽²⁷⁾ or as uncertain and

imprecise data that lacks completeness or accuracy, according to Cooke.⁽²⁸⁾ While its lack of truthfulness does not stem from deliberate action,⁽²⁹⁾ misinformation may arise from inadvertent errors, negligence, or cognitive biases.⁽³⁰⁾ Misinformation occasionally manifests as a broad categorization encompassing all false or inaccurate information disseminated across social media platforms.⁽³¹⁾ For instance, definitions of the term “fake news” often interpret it as a deliberate dissemination of misinformation through traditional news media or social media channels.⁽³²⁾ It is pertinent to emphasize that often there is no implication of misinformation, but solely a deliberate dissemination, which somewhat mitigates potential confusion. However, we advocate for a clear distinction between these concepts. Therefore, we propose to recognize misinformation as information that lacks the intentional harm associated with disinformation.⁽³³⁾

The term “mal-information,” conversely, refers to authentic information shared with the explicit aim of causing harm, typically by divulging private information into the public domain.⁽³⁴⁾ Mal-information comprises content grounded in reality yet is employed deliberately and purposefully to cause harm to individuals, social collectives, entities, or nations.⁽³⁵⁾ The deliberate intent and genuine informational content of mal-information distinguish it from both inadvertent misinformation, which may be false but not intended to deceive, and deliberate disinformation, which is intentionally false.⁽³⁶⁾

These concepts represent significant societal threats across various domains. However, it is pertinent to investigate their specific implications within the agri-food sector, a task we undertake in the subsequent sections.

2 Agri-food sector: Its importance and vulnerability

Agriculture plays a crucial role in various aspects of society, making it an essential sector globally. The significance of agriculture is multifaceted, encompassing food security, economic development, environmental sustainability, and social well-being. Agriculture is fundamental for human health and

19 Wang (2020)

20 UNESCO (2018)

21 Patak, Srihari, Natu (2021)

22 *Ibid.*

23 Wu et al. (2019)

24 Fallis (2015)

25 Wardle (2017)

26 Baptista, Gradim (2022)

27 Merriam-Webster dictionary (2023)

28 Cook (2017)

29 *Ibid.*

30 Meel, Vishwakarma (2020)

31 Wu et al. (2019)

32 Gelfert (2019)

33 Wang (2020)

34 Muhvić, Čulo (2022)

35 Lotto et al. (2023)

36 Erlich, Garner (2021)

nutrition, rural poverty reduction, and overall agronomic health.⁽³⁷⁾ It serves as a vital source of food production, contributing to food security and ensuring the availability of nutritious food for populations worldwide.⁽³⁸⁾ Additionally, agriculture is a key player in addressing climate change challenges, with climate-smart agricultural practices being pivotal in promoting sustainable development and mitigating the adverse impacts of climatic changes on productivity.⁽³⁹⁾

Disinformation in agriculture therefore poses a significant threat to the various aspects of the industry. Farmers are increasingly exposed to misinformation and disinformation (fake news), affecting their decision-making processes and potentially leading to the adoption of unsustainable practices.⁽⁴⁰⁾ The dissemination of disinformation and misinformation in animal agriculture through social media can have far-reaching consequences, influencing public perception and policy decisions.⁽⁴¹⁾ In the context of groundwater modeling in agriculture, the presence of disinformation in observational data can complicate the conditioning of models and lead to inaccurate results.⁽⁴²⁾ Furthermore, effective communication of climate science in agriculture is crucial, as poor communication strategies can contribute to the spread of climate change disinformation and misinformation, resulting in skepticism towards scientific findings.⁽⁴³⁾ Concerning genetically modified crops, confusion, disinformation, and reliance on rumors among cultivators are evident, underscoring the importance of accurate information dissemination.⁽⁴⁴⁾ Efforts to combat disinformation and misinformation in agriculture necessitate proactive communication strategies and frameworks for effective management systems.⁽⁴⁵⁾ Deliberate disinformation campaigns can further confuse stakeholders and hinder policy-making processes, highlighting the importance of science-informed policies and clear communication channels.⁽⁴⁶⁾ Addressing disinformation and misinformation in agriculture is crucial for promoting sustainable practices, environmental protection, and ensuring the well-being of communities involved in the industry. Now, let us proceed to examine specific instances of disinformation and misinformation within

the agri-food sector, which have resulted in significant societal ramifications.

3 Disinformation and misinformation in agri-food sector and its consequences

As demonstrated earlier, agriculture constitutes a pivotal asset, and the dissemination of misinformation and disinformation possesses the capacity to inflict harm across various dimensions. Nevertheless, as elucidated in the subsequent discourse, the tangible ramifications of real-life disinformation and misinformation can prove to be substantially more severe. A substantial body of historical evidence exists to substantiate the prevalence of various types of disinformation and misinformation within the agri-food domain. Trofim Lysenko's proposition positing that the development of plants and animals is predominantly influenced by environmental factors rather than genetic predisposition represents a pivotal historical case study. This theory, which gained prominence particularly during the early 1930s, led to the implementation of agricultural policies in the Soviet Union. However, the practical application of these policies resulted in severe consequences, including widespread famine, leading to the starvation of millions of Soviet citizens.⁽⁴⁷⁾ Another notable historical case study pertaining to the agri-food sector in Europe during the 1970s and 1980s is exemplified by the Villejuif Leaflet. Disseminated through brochures and fliers, this initiative propagated concerns regarding the presence of harmful and carcinogenic substances in a range of food and beverage products, particularly targeting younger demographics, thereby instigating widespread panic among European populations.⁽⁴⁸⁾ Both historical instances serve to delineate the socio-cultural milieu and the propagation of misinformation prior to the emergence of the internet. However, the advent of the internet heralded a paradigm shift, exponentially amplifying the dissemination of disinformation and misinformation and augmenting its deleterious ramifications. According to Lynas, Adams and Conrow, misinformation concerning GMOs remains a notable concern in media outlets, with approximately one-tenth of all coverage pertaining to agricultural biotechnology containing inaccuracies that diverge from established scientific knowledge. This rate of misinformation exceeds that observed for vaccines and mirrors the level of politicization evident in discussions surrounding climate change. The potential global audience exposed to such misinformation reached over a quarter of a billion

37 Brown et al. (2020)

38 Rippke et al. (2016)

39 Ghosh (2019)

40 Rust et al. (2021)

41 Hiltbrand (2023)

42 Delsman et al. (2016)

43 Getson et al. (2022)

44 Herring (2023)

45 Karinshak (2023)

46 Loucks (2021)

47 Kolchinsky et al. (2017)

48 Kapferer (1989)

individuals between 2019 and 2021.⁽⁴⁹⁾ In a recent incident, a blogger hypothesized that dairy producers in Canada were supplementing animal diets with palm oil, resulting in changes to the melting temperature and consistency of butter. This assertion spurred polarized responses on social media, with proponents advocating conflicting explanations or remedies based on divergent values. Consequently, farmers were urged to refrain from incorporating palm oil into animal feed. Subsequently, Canadian butter sales experienced a sustained decline over several months following its coverage in an international news article.⁽⁵⁰⁾ In Slovakia, a recent incident emerged involving a hoax propagated by Russian hybrid warfare tactics, targeting Ukraine. The Kolárovo mill, located in Slovakia the country detected chlorpyrifos, a pesticide, in a shipment of grain originating from Ukraine, surpassing permitted levels. Subsequent testing yielded differing results, prompting the mill to assess the flour derived from the contaminated wheat. Analyses confirmed the absence of pesticides in the flour, thereby negating any health risks associated with the final product.⁽⁵¹⁾

Chlorpyrifos, the identified residue, is authorized for use in over 100 nations globally and was permitted within the European Union until 2020. Experts highlight that similar findings are not exclusive to Ukrainian grain but may also be present in some domestic Slovak products. Despite this, various purveyors of disinformation seized upon the situation to amplify anti-Ukrainian sentiment.⁽⁵²⁾

A pro-Russian disinformation platform, "Army of The Russian Federation," lamented Slovakia's perceived aid to Ukraine, insinuating ingratitude on Ukraine's part.

Likewise, another disinformation outlet, "Bádateľ," exploited the situation by drawing an unwarranted comparison to a 2008 Chinese scandal involving contaminated baby milk. By insinuating parallels between the two disparate incidents and invoking punitive measures in China as the death penalty, "Bádateľ" aims to instill fear and prejudice against Ukrainian products, as well as propagate negative perceptions of the country as a whole.⁽⁵³⁾

Recently, Slovakia has witnessed a wave of hysteria fueled by disinformation and conspiracy theories, particularly concerning food products labeled with the term "frogs." According to prominent conspiracy theorists and purveyors of hoaxes, such labeling purportedly signifies the inclusion of toxic substances

deliberately added by global elites to orchestrate a reduction in the world's population. Among the alleged conspirators are figures like Bill Gates, George Soros, and Klaus Schwab. Despite the absurdity of these claims, such narratives persist within the disinformation landscape. In actuality, the "frogs" label corresponds to the logo of the Rainforest Alliance, an international nonprofit organization that grants its certification to agricultural and forestry products meeting specific criteria related to social, economic, and environmental sustainability.⁽⁶⁴⁾

Given the aforementioned points, it is imperative to advocate for sustainable methodologies and counteract the influence of disinformation and misinformation within the agri-food sector. This is crucial for upholding its foundational roles in ensuring food security, poverty alleviation, sustainable development, and the enhancement of overall societal welfare for both current and future generations.

II Conclusion

It is evident that disinformation, encompassing both deliberate dissemination of false information intended to cause harm and unintentional propagation of false content, poses a significant societal risk with far-reaching implications across various sectors and institutions. The agri-food sector, being a vital component of the economy, is particularly vulnerable to disinformation campaigns due to its inherent sensitivity. This sector has frequently been targeted by misinformation threats driven by diverse motives, ranging from political and military objectives to economic agendas. Given the pivotal role of agriculture in providing sustenance, livelihoods, economic stability, and environmental conservation, addressing the challenges arising from disinformation in this sector is imperative. It is though essential to promote sustainable practices and mitigate the impact of disinformation and misinformation to ensure food security, alleviate poverty, and enhance overall societal well-being for present and future generations. Ensuring the resilience of the agri-food sector against disinformation and misinformation is also imperative for safeguarding human rights, which are directly or indirectly imperiled by disinformation and misinformation activities within the agricultural domain.

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49 Lynas, Adams, Conrow (2022)

50 Chowdhury et al. (2023)

51 Dubóczy, Škríbová (2023)

52 *Ibid.*

53 *Ibid.*

54 Čechmánek (2023)

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