What Lessons Can Be Learned for the Agroecological Transition From the Use of Social Media in Preventive Medicine?

Vincent Soulignac, INRAE, France

François Pinet, INRAE, France*

Mathilde Bodelet, INRAE, France

Hélène Gross, ACTA, France

ABSTRACT

In agriculture, web-based social media are increasingly used to share knowledge concerning best practices. One goal of agroecology is to reduce the use of synthetic chemical inputs. Agroecology represents a contrast with intensive agriculture in that it better manages interactions with life forms. It is crucial to help people share their knowledge to accomplish the agroecological transition. This paper proposes an analogy between the use of social media to facilitate (1) caring for plants in the context of agroecology and (2) preventing human diseases in the context of medicine. The authors created a bibliography of scientific publications related to social media use in preventative medicine to identify best practices for social media use (and the associated drawbacks) that can be applied to develop social media dedicated to agroecology.

KEYWORDS

Agroecology, Internet, Medicine, Social Media, Web-Based

INTRODUCTION

There is strong societal demand for agricultural production practices to become more environmentally friendly. Agroecology represents a contrast with intensive agriculture in that it better manages interactions with life forms. Unlike forms of intensive agriculture, which respond to problems by proposing one identical solution for all cases, agroecology is based on the management and optimization of natural processes. This framework is contextual. It requires a process of observation and continuous adaptation over a long period featuring many agricultural rotations. Because these interactions include multiple parameters, the agronomic knowledge associated with this type of agriculture is not only extensive but also unstable. In fact, a lack of the ability to capitalize on the knowledge involved in sustainable agriculture and the failure to disseminate such knowledge have been highlighted in Soulignac (2012) and constitute an obstacle to the development of these practices.

In agriculture, as in any undertaking (Le Boterf, 2008; Nonaka & Takeuchi, 1995), knowledge is very important. Farms are very small companies that, out of necessity, establish numerous ties with other stakeholders, such as their peers and professional agricultural organizations both upstream and downstream of production. However, the proliferation of the different types of knowledge (empirical, scientific, local) that are required in agroecology and the call to implement a learning process both initially and continuously require new, more interactive ways of establishing relationships and using them as assets. The development of digital tools and social media in particular meets this need.

Canadian communication theorist Marshall McLuhan (1964) and writer Régis Debray (1991) highlight the major role played by information transmission technologies in the structure of organizations. In this sense, Guyot (2002) defines information not only as a resource but also as a "social and organizational binder." For example, in the case of agriculture, social media promote the emergence of professional communities that are novel in terms of both their composition and their operation. We believe—given the limited feedback concerning the use of these new techniques in agriculture—that it is relevant to explore social media use in other domains. However, one way of reducing the use of phytosanitary products is to adopt a prophylactic vision of the health management of plants and animals. Agroecology therefore relies on practices that mitigate diseases before they occur rather than treating them using phytosanitary products and antibiotics. A challenge for agroecology is the task of reducing the use of synthetic chemical inputs by ensuring that agroecosystems function properly. The purpose of preventive medicine is to ensure that the human organism functions properly so as to avoid the necessity of using synthetic products to address health problems. Based on an analogy between caring for plants (and animals) and the prevention of human diseases, we created a bibliography of scientific publications concerning social media use in preventative medicine to accomplish multiple goals:

- to identify and characterize interesting case studies,
- to identify best practices for social media use (and the associated drawbacks),
- concerning the form of social media, to highlight the commonalities between disease prevention in humans and agriculture, particularly in the context of environmental protection, as in the context of agroecology, and
- to examine the potential application of social media to agroecology.

Social media are used to share knowledge concerning preventative actions that are beneficial for health, and they can also be used to share knowledge related to beneficial actions in agriculture that can be implemented in the context of agroecology. In addition, both agriculture and medicine focus on natural processes. A parallel between the two fields thus emerges.

In the following sections of this paper, we present the method that we used, the results that we obtained from the thirty articles we surveyed, and a critical discussion of these results. This research was conducted as part of the French Casdar AGOR@GRI project, the purpose of which is to provide key resources to farmers, advisers, trainers, and other stakeholders in development with the aim of optimizing their social media use to promote and support the agroecological transition. The AGOR@GRI project aims to (a) define best practices and identify obstacles and (b) define ideas related to various features, services, and attributes that we could use as sources of inspiration to design social media for use in the field of agroecology and to support entities wishing to develop such social media.

The approach presented in our paper focused on searching for scientific articles that describe and analyze different uses of social media in the context of preventive medicine. Subsequently, we highlighted the ways in which these uses can be applied in the context of agroecology. The following sections explain our methodology for searching papers concerning the use of social media for preventive medicine, summarize the main aspects of each of the papers found in the search, indicate how these aspects can serve as a source of inspiration for the use of social media in the field of agroecology, and highlight the lessons that can be learned from these papers for the agroecological

Related Content

Introducing Activity-Based Costing in Farm Management: The Design of the FarmBO System
Giacomo Carli, Maurizio Canavariand Alessandro Grandi (2014). *International Journal of Agricultural and Environmental Information Systems (pp. 69-84).*
www.irma-international.org/article/introducing-activity-based-costing-in-farm-management/120437

Analysing Structures of Interregional Migration in England
James Raymerand Corrado Giulietti (2010). *Technologies for Migration and Commuting Analysis: Spatial Interaction Data Applications (pp. 280-293).*
www.irma-international.org/chapter/analysing-structures-interregional-migration-england/42732

Concept Drift Detection in Data Stream Clustering and its Application on Weather Data
Namitha K.and Santhosh Kumar G. (2020). *International Journal of Agricultural and Environmental Information Systems (pp. 67-85).*
www.irma-international.org/article/concept-drift-detection-in-data-stream-clustering-and-its-application-on-weather-data/244148

Supervised Machine Learning for Plants Identification Based on Images of Their Leaves
Mohamed Elhadi Rahmani, Abdelmalek Amineand Reda Mohamed Hamou (2016). *International Journal of Agricultural and Environmental Information Systems (pp. 17-31).*
www.irma-international.org/article/supervised-machine-learning-for-plants-identification-based-on-images-of-their-leaves/168499

Adoption of Wearable Technology Devices: A Cross-Cultural Study
Bengi Meriç Benderlioluand U. Zeynep Ata (2022). *Disruptive Technologies and Eco-Innovation for Sustainable Development (pp. 268-283).*
www.irma-international.org/chapter/adoption-of-wearable-technology-devices/286448