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Corresponding Editor: Anna Irene De Luca

ORCID

GM: 0000-0003-0026-4746

MV: 0000-0001-7016-6549

GG: 0009-0005-1153-5662

RH: 0000-0003-1677-0387

Short communication

'No farmers, no food': a sentiment analysis of the 2024 farmers' protests in Italy

GIAMPIERO MAZZOCCHI*, MARCO VASSALLO, GIULIANO GABRIELI, ROBERTO HENKE

CREA – Research Centre for Agricultural Policies and Bioeconomy, Italy

*Corresponding author. E-mail: giampiero.mazzocchi@crea.gov.it

Abstract. Starting in January 2024, street protests by farmers' groups spread in several European countries. The demands, which started from rather specific aspects, have broadened to involve economic, environmental and geo-political considerations, calling the already weakened European Green Deal even more into question. Starting from an analysis of the motivations for the protests and the responses provided by national governments and European institutions, the article tracks the main arguments that characterized the motivations of the so-called 'tractor protests', through the methodology of Sentiment Analysis applied to the social network of accounts (specifically, X) relating to different categories of subjects interested in the debate. The results indicate a generally positive sentiment, characterised by trust and anticipation, suggesting potential for improving the relationship between society, institutions, and the conditions of farmers. Farmers remain at the centre of the debate, which focused on two key areas: the economic and competitive conditions of agricultural businesses, and the compatibility and economic sustainability of the environmental regulations embedded in European policies. The research revealed that the demands were somewhat fragmented and inconsistent. Nevertheless, the protests, although short-lived, had a significant impact by prompting European institutions to steer environmental and agricultural policies in new directions. Additionally, the research highlights that innovative investigative methods can be effectively applied to examine the interplay between the technicalities of public policies and collective perceptions.

Keywords: farmers' protests, agriculture, social media, European Union, Italy, sentiment analysis.

JEL codes: Q18, Q17, O13.

HIGHLIGHTS

- The 'tractor protests', which have taken place in several European countries since January 2024, have been characterised by an important role of the social media.
- Sentiment Analysis applied on X posts by relevant stakeholders has been used to understand the common reactions to the farmers' protests.
- The results highlighted that most sentiments were positive, especially for specialized media and Members of European Parliament.

- The Sentiment Analysis highlights that the economic and social condition of farmers, and their place in the overall economy, were the prevailing aspects.

1. INTRODUCTION

The recommendation by the European Commission (EC) to exclude agricultural emissions from the reduction of greenhouse gases by 90% by 2040 and the withdrawal of the halving of pesticide use are rather clear evidence of the apparent success of the protests of farmers affecting several important European Union (EU) Member States (MS), including Germany, France, Belgium, Italy, Spain, Poland and Portugal, since January 2024. Beyond such apparent success, it is worth investigating what the main arguments have been, the most active actors and the reactions of different categories of stakeholders to the farmers' protests. The protests have radically questioned the latest EU decisions and policies on environment and agriculture, such as the Green Deal, Farm to Fork and Common Agricultural Policy (CAP), and especially on their lack of answers to the long-standing issue of agricultural incomes instability. This theme has been in opposition to the issue of sustainability in agriculture and ecological transition. Such opposition requires proper thinking, also considering the flexibility the new CAP intends to offer to the MS and their farmers (De Castro, 2020; Cagliero *et al.*, 2023). In Italy, given the relevance of small farms in terms of number of units and their contribution to production and land stewardship (Henke, Sardone, 2022), a crucial aspect of the protest has addressed the future role of small-scale farming activity. In this context, the social media and informal organizations have assumed a particular importance in orienting and manoeuvring the public debate. As Matthews states (2024a: 83), 'this leaves the door open to the potential for disinformation by outside actors (via social media) as well as attempts to influence the protests by non-farm groups'.

Provided that the impact of narratives on food systems is powerful (Mazzocchi *et al.*, 2023), we aimed at reconstructing the main arguments during the protests through a textual-analysis methodology, to catch and interpret the general attitude towards the protests emerging in social networks. In this context, it is important to report that the protests have left their mark not only in their influence on the recent European elections, but also in several high-level documents, including the CE President von der Leyen's political guidelines, and the report 'A shared prospect for farming and food in Europe' published in September 2024 in the framework

of the Strategic Dialogue on the Future of EU Agriculture (Strohschneider, 2024). However, the protests have faded from the headlines and reconducted within the traditional frames of technical and specialised organs.

During the protests, tractors blocked roads and supermarkets, protests received massive media attention, and slogans such as 'no farmers, no food' resonated widely in the public debate (Finger *et al.*, 2024). This article tracks the main arguments that characterized the motivations of the so-called 'tractor protests', through the methodology of the Sentiment Analysis (SA) applied to posts on social network accounts (specifically, X) relating to different categories of subjects interested in the debate. The study is motivated by the perception that the debate was influenced by the public media debate during the central months of the protests. It is precisely this element of novelty that is the core of our analysis and opens the doors to innovative methods of investigation applied to the relationship between the technicalities of public policies and collective perception. Although referred to the Indian context (Neogi *et al.*, 2021; Singh, 2022; Sresta *et al.*, 2024), the Sentiment Analysis has already been tested as a valid methodology to analyse massive amounts of unstructured reviews and convert them into meaningful opinions (Tiwari, Nagpal, 2022). Nevertheless, the research does not intend to explore the policy implications of the protest, nor the outcomes it has produced within the European Parliament (EP) or, more generally, in European policies.

2. FROM PROTESTS TO RESPONSES

2.1. *The origins and dimensions of protests*

Although seemingly initiated by a rather jagged series of specific issues in some MS, the protest has converged on some demands, yet patchy, calling for a change in the directions assigned to European agricultural policies by the recent CAP reform and the agricultural elements of the Green Deal (Matthews, 2024a; Finger *et al.*, 2024). The protest has been recognized by the EC as 'a crisis situation in EU agriculture', paving the way for two prevailing lines of considerations: one includes a wide series of economic issues, from farmers' income to increased production costs, passing through competition with non-EU countries; the second involves the more general social pact between farmers and society based on the supply of and demand for social, environmental and economic complementary services provided by farmers.

On the first point, there is much discussion about the importance of the economic sustainability of agricultural activity so that all related services of an envi-

ronmental and social nature can be ensured (Finger, El Benni, 2021). Matthews (2024b) sought to shed light on the state of agricultural incomes in Europe, challenging the prevailing narrative of small and medium-sized agricultural enterprises being under immense pressure due to a multitude of crisis factors, including the pandemic and ongoing wars, compounded by the structural crises of European family farming (Antošová *et al.*, 2021). Matthews' perspective stands in contrast to the mainstream view. Contrary to large part of protests' narratives, agricultural incomes in Europe, and in most MS, have remained stable or even grown since 2005, despite the rising costs of intermediate inputs. This analysis fails to account for non-agricultural income, which significantly impacts the household income of farm families, potentially confirming or offsetting the positive trend observed in strictly agricultural income. Indeed, Eurostat income indicators reveal a surprising positive trend, moving in unison. The two numerators of these indicators, agricultural income and entrepreneur's income, show little difference in growth rates; when reported per work unit, the percentage growth is even more evident (Matthews, 2024b). Agricultural income and entrepreneur's income grew by 84% and 119%, respectively, between 2005 and 2023, with the surge in income occurring precisely from 2020 onwards, contrary to what happened in sectors such as construction. These dynamics, however, are due to the sharp decline in total and family labour force in Europe over the years considered. Among the economic elements, there is the failure to recognize a fair price for farmers within the agri-food chains. According to a prevailing narrative during the farmers' protests, this is attributed to financial speculation on raw materials, the failure to recognize the principle of equivalence of environmental and trade union standards in international trade, and, to a lesser extent, the value-added distribution mechanisms dominated by large-scale retail chains (Ferroni, 2024).

The second issue is the rapidly changing relationship between agriculture and civil society (Strohschneider, 2024), to the extent that the protests have surfed the general discontent on the perceived burden of environmental regulations and restrictions. Agriculture is ideally entrusted with a more complex and composite role than simply producing food, textile fibres, and raw materials for supply chains (Van Huylenbroeck *et al.*, 2007), providing social and environmental services that often take on the features of public goods (Sotte, 1997; Henke, 2004). The social recognition of such a role corresponds to a broadening of the justifications for public spending, which therefore shifts from supporting the status of farmers as 'objectively' disadvantaged to remunerat-

ing the production of services demanded by citizens and for which taxpayers are willing to pay (Sotte, 2023). This new concept of agricultural support, which has increasingly favoured measures for environmental and rural land interventions, relies on a complex system of regulations and incentives that, according to farmers, drops its administrative burden precisely on the actors of the production phases. It is worthwhile recalling that the ecological transition pledged by the EC is a long and complex path and concerns an articulated balance between economic, social and environmental objectives that often show apparently irreconcilable trade-offs (Kanter *et al.*, 2018). Nevertheless, a large part of the protests has focused on the effects of environmental regulations in terms of increased administrative burden and lower revenues due to smaller cultivable areas to leave room for natural elements in favour of biodiversity (consider, in this regard, the revision of the Good Agricultural and Environmental Condition – GAEC – standards of the CAP). This has happened despite the fact that it is now recognised that the ecological transition can no longer be postponed for long, and that European agriculture must continue on its path of strengthening the elements of sustainability in a clearer and more systemic way. Furthermore, concerns about prioritizing food production after the Ukraine war, coupled with the perceived burden of environmental regulations, fuelled opposition to the EC's legislative proposals for achieving goals outlined in the Farm to Fork and Biodiversity Strategies. The apparent success of the protests and the almost immediate abandonment of some of the positions most favourable to a sustainable transition – with a speedier pace than the traditional path dependency of the CAP (Henke *et al.*, 2018) – should be carefully analysed, with a focus on what the future consequences could be.

2.2. The responses

Overall, farmers' protests have caused a shift in the EU's political landscape. This is evident in the slowdown of the Green Deal legislation, the watering down of certain environmental measures within the recent CAP reform, and the implementation of stricter limitations on agricultural imports from Ukraine. However, some analysts (Matthews, 2024a) point out that the responses implemented by the EC and national governments, while consistent with the political shift that led to the sacrifice of several Green Deal elements, were hasty, limited in scope, and aimed primarily at quelling the protests.

In response to the economic motivations behind the protests, in March 2024 the EC presented proposals to improve farmers' remuneration and their position in

food supply chains. These included the establishment of an Agriculture and Food Chain Observatory to examine production costs, margins and trading practices in the agri-food sector, potential modifications to the Common Market Organizations regulation, and a possible revision of the Unfair Commercial Practices Directive. Furthermore, in the wake of the protests, some MS took action, capitalizing on the momentum of the demonstrations, to call for the relaxation of certain unfavourable conditions, such as Italy's request to the European Council for a moratorium on agricultural business debts.

As for the second group of motivations, the proposal for a Sustainable Use of Pesticides Directive, which aimed to establish reduction targets for MS, was rejected by the EP and subsequently withdrawn by the Commission. The Nature Restoration Law Directive faced a more complex fate. While it ultimately passed the Parliament due to divisions within the EPP group, key targets related to agricultural ecosystems were significantly weakened or eliminated through political compromise with the Council. Despite an initial agreement, several MS later withdrew their support, casting doubt on the Council's final approval. The Industrial and Livestock Rearing Emissions Directive, despite approved in its watered-down version, gained some traction, securing approval by the Parliament and anticipated endorsement by the Council. However, the Commission's proposed expansion of the Directive's scope to encompass larger livestock units and additional industrial pig and poultry facilities was largely rejected. Finally, the EC opted to postpone the introduction of a Framework Law on Sustainable Food Systems, initially intended to integrate sustainability principles across all food-related policies, until its next mandate. These setbacks highlight the ongoing challenges within the EU in achieving a comprehensive and ambitious approach to sustainable food systems (Matthews, 2024a).

In this framework, in response to the February 1st 2024 European Council meeting, which urged the Council and Commission to address challenges in the agricultural sector, the EC proposed a series of amendments to the CAP regulation agreed upon in 2021 and implemented since 2023. These amendments include simplification measures to reduce the administrative burden of inspections and controls for both farmers and national administrations, and relaxation of the GAEC standards that farmers must meet to be eligible for direct payments. In parallel with these regulatory changes, the Commission has launched a survey to gather farmers' perspectives on the administrative burden imposed by regulations. Additionally, the EC is actively developing measures to improve farmers' position within the food

chain and protect them from unfair trading practices. Proposals addressing these concerns are expected to be presented shortly and will cover areas such as market transparency, trading practices throughout the value chain, and production costs. Additionally, on 25 January 2024, a Strategic Dialogue on the Future of Agriculture was launched at the initiative of the Commission President von der Leyen, managed by a forum tasked with defining a shared vision for the future of the EU agricultural and food system and to overcome the polarization that currently characterizes agricultural policies.

3. METHODOLOGY AND RESULTS

A collection of 4,260 Italian posts was carried out from X by means of X-APIv2 Basic (X Developer Platform, 2024) from January the 1st to March the 17th 2024. These posts were initially selected by following 56 X accounts composed of Members of European Parliament (MEPs) (for the 2019-2024 mandate), journalists, opinion people, social partners, specialized media and successively reduced to 477 posts by using keywords¹ more focalized to the protest.

The strategy of analysing the posts consisted in a mixed approach of Sentiment Analysis Classification (SAC) and Text Mining-Clustering (TM-C; Gupta, Lehal, 2009; Mandják *et al.*, 2019; Younis, 2015). SA has emerged as a new tool for analysing Web 2.0 information (Cambria *et al.*, 2017) and it has the main objective of classifying opinions, social media posts or simply sentences as positive, neutral, negative (Liu, 2015). Specifically for SAC the affective lexicon NRC Emotion Lexicon² (Mohammad, Turney, 2013) was applied. SA and TM-C are additional methods for textual data processing to reveal unknown patterns within the elicited texts by means of the words' co-occurrences (Illia *et al.*, 2014). The automatic textual analyses were performed by the

¹ Two levels of keywords were used to select the post. The first level is comprised of terms like: "trattori, protesta, proteste e agricoltori". The second level includes terms like: "agricoltura, ambiente, ambientale, ambientali, cibo, agroindustria, aziende agricole, Bruxelles, contadino, contadini, eco-schemi, eco-schemi, esenzione, esenzioni, estero, Europa, europeo, europea, Farm to Fork, green deal, Irpef, normativa, normative, manifestazione, manifestazioni, marcia, mercato, mercati, milleproghe, presidio, sostenibile, sostenibilità, prezzo, prezzi, reddito, redditi, transizione ecologica, politica agricola comune, sussidi e gasolio". The posts were selected when: a) at least a term of the first level was present; b) at least a term of the first and the second level was present; c) at least two terms of the second level were present.

² This lexicon was recently updated in August 2022 with automatic translations from English to 108 languages and it embodied eight basic emotions other than the polarities positive and negative. The NRC lexicon is available here: <http://saifmohammad.com/WebPages/NRC-Emotion-Lexicon.htm>

Table 1. Accounts and posts.

	Accounts				Posts on X			
	n	(%)	Topic 'Protest'	(%)	n	(%)	Topic 'Protest'	(%)
Journalists	3	5.4	2	4.6	390	9.2	6	1.3
Specialized media	14	25.0	11	25.0	600	14.1	55	11.5
Opinion people	12	21.4	11	25.0	1,035	24.4	179	37.5
MEPs	19	33.9	12	27.3	1,895	44.6	140	29.4
Social partners	8	14.3	8	18.2	330	7.8	97	20.3
TOTAL N	56	100	44	100	4,250	100	477	100

Figure 1. Sentiment Analysis Classification – Polarities (%).

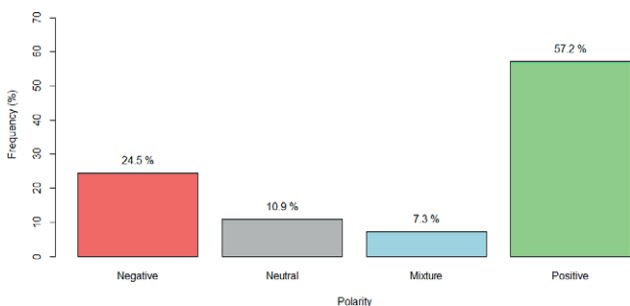
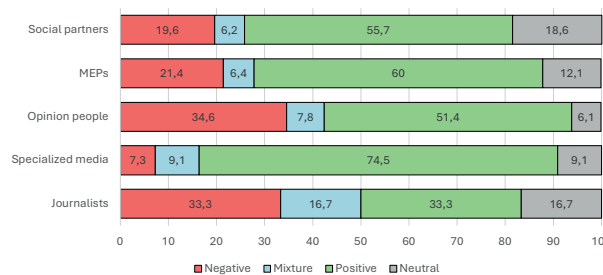


Figure 2. Sentiment Analysis Classification by account categories.



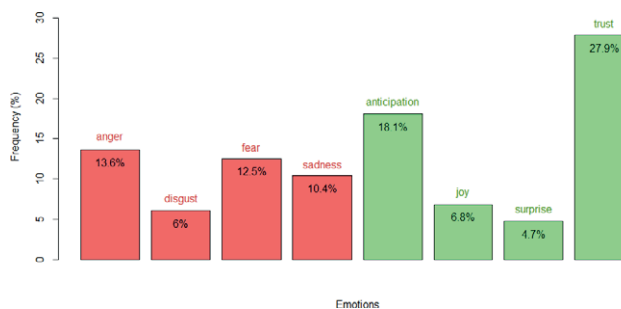
software R (R Core Team, 2021) and IRaMuTeQ version 0.7 alpha 2 (Ratinaud, 2014).

Table 1 reports the posts and accounts distributions. The number of accounts is reduced to 44 out of 56. Figure 1 depicts the SAC polarities with 57.2% positive views, 24.5% negative, 10.9% neutral and 7.3% a mixture between positive and negative.

Looking at Figure 2, the distribution of accounts by polarities highlighted that despite the positive feeling generally found across all categories, the specialized media showed the highest percentage (74.5%) whereas opinion people and journalists the highest negative ones (34.6% and 33.3%). Journalists also showed the same percentage of positive polarity (33.3%) while social partners the highest level of neutral posts (18.6%) very close to the percentage of negative polarity (19.6%).

The NRC lexicon furnishes also eight basic emotions within each polarity depicted in Figure 3. Although the protest released more or less uniform negative emotions like anger, fear and sadness, it has also generated a high level of trust and anticipation of possible positive outcome, often in terms of policies³.

Figure 3. Sentiment Analysis Classification – Emotions by polarities (%).



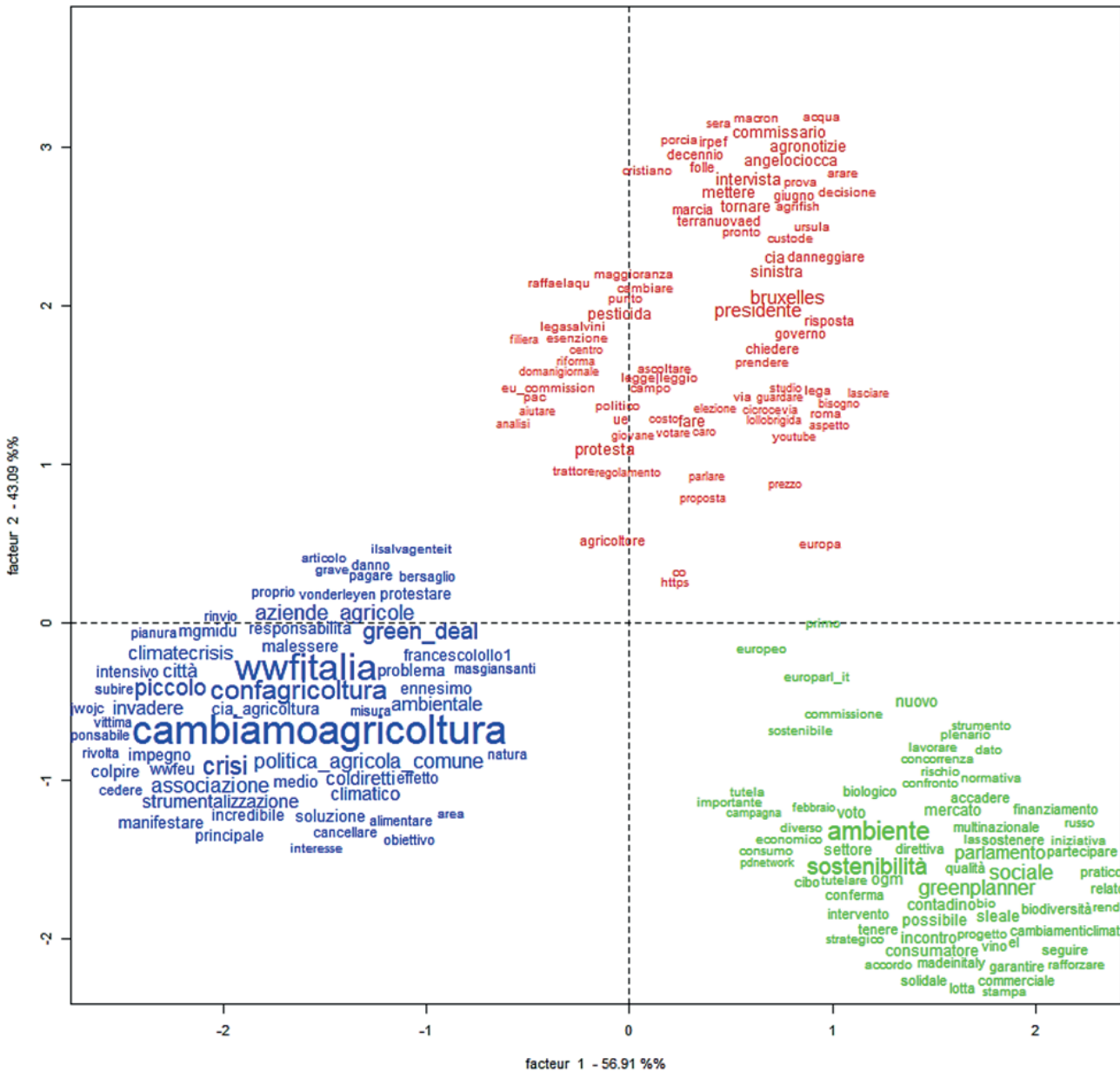
Figures 4-5 depict TM-C solutions on the entire collection of 477 posts.

The TM-C yielded a robust statistical result based on the hierarchical descending classification (HDC) algorithm throughout the Chi-squared distances to group the posts into common and independent clusters. Each cluster represents a homogeneous view of the protest because the internal vocabulary of the posts is similar.

³ Example of anticipation post: "I agree with the president's words on the importance of strategic dialogue with farmers. I support the need for environmental sustainability that includes social, productive and economic aspects. Farmers and the environment are allies, not adversar-

ies". Example of trust post: "Brussels for a fairer common agricultural policy for workers, farmers need the European Union and its common agricultural policy as long as the latter places as a priority respect for the rights and protections of anyone who works in the fields"

Figure 4. Correspondences Factor Analysis diagram between clusters identified in the polarized posts. English language equivalents are reproduced in Table A.1.

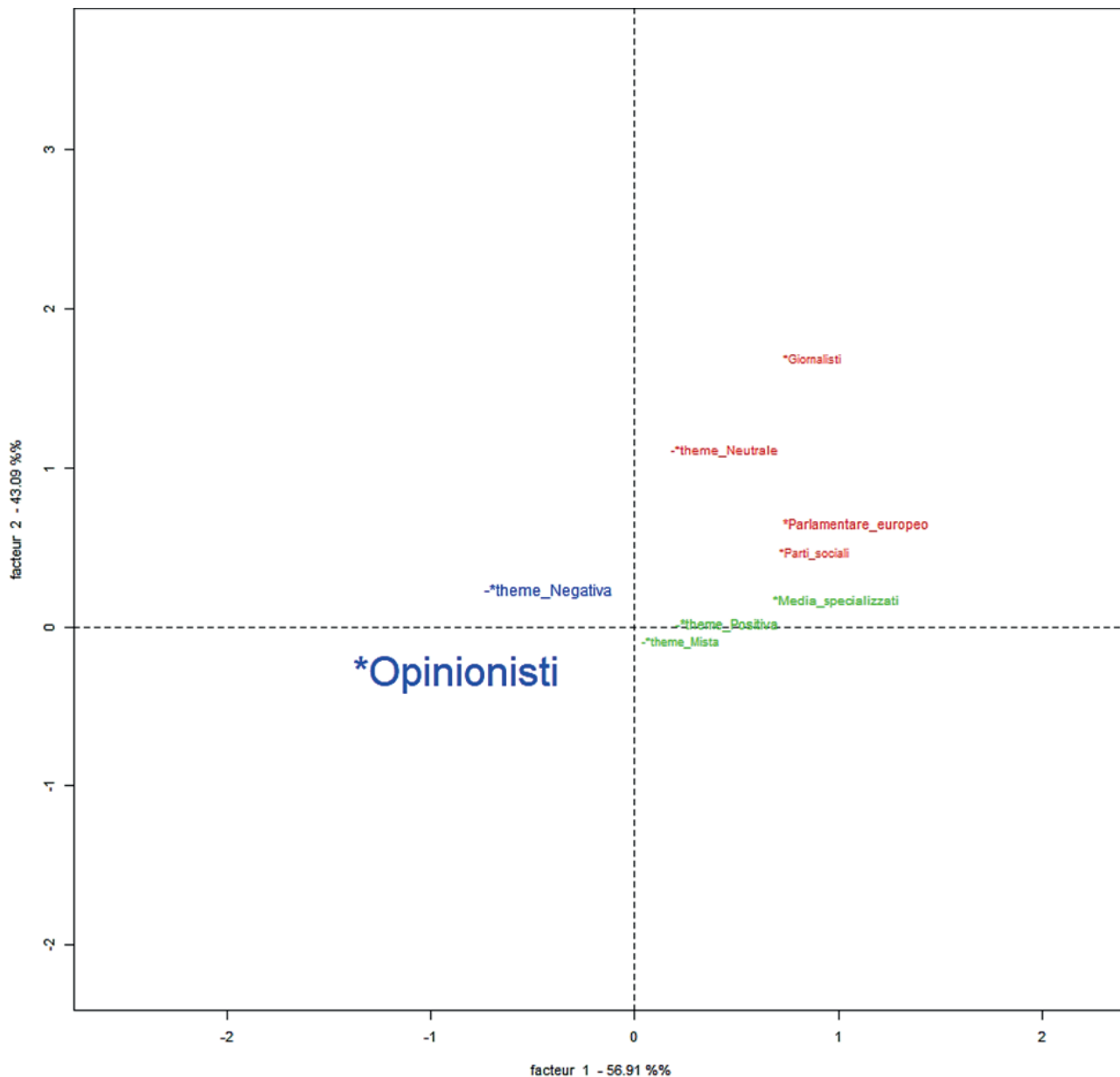


Figures 4 and 5 respectively depict the correspondence factorial analysis diagrams of the clusters wording and the variables that characterize them (i.e., the accounts categories and polarities of the posts are the two variables that initially grouped the posts). The classification stability provided a solution with 75.13% of the words segments correctly classified. Hence, the three clusters were very homogeneous and distant from each other.

The green cluster is the one with more terms (35.4%), is defined by positive and mixture polarity

and is mainly composed of specialized media (see Figure 4) who draw attention on the multiple domains of sustainability, ranging from environmental sustainability to market and consumers. As a matter of fact, the most important words, i.e. the biggest in Figure 4, the most important and concatenated words with the others within each cluster are: *ambiente* (environment), *sostenibilita* (sustainability), *parlamento* (parliament), *mercato* (market), *consumatore* (consumer), *sociale* (social), OGM, (GMO) and *multinazionale*

Figure 5. Correspondences Factor Analysis diagram between clusters identified in the polarized posts and account categories. English language equivalents are reproduced in Table A1.



(multinationals), with hashtags like '#ogm, #cambiamenticlimatici and #madeinitaly'. The red cluster is the second with more terms (33.5%), is identified by neutral posts and is mainly composed of MEPs, social partners and journalists. The most important words and hashtags are: *presidente* (president), *fine* (end), *protesta* (protest), *intervista* (interview), *pesticida* (pesticide), *sinistra* (left), *commissario* (commissioner), *chiedere* (ask), #Bruxelles, #cia, #agronotizie, #angelococca (MEP), #UE'.

The blue cluster is the least numerous with 33.1% of the terms, is distinguished by a negative polarity and predominantly composed of opinion people who place their attention on: a) problematic issues regarding the inequality of the CAP; b) the bad role of the agricultural associations that take advantage of this situation to use the farmers' disappointment for holding back the ecological transition; c) and even responsibility is given to farms with intensive livestock that work against the environment that: 'non possiede trattori per invadere le

città' (i.e., quoting a post that says 'it – the environment – has not tractors for occupying cities').

3. DISCUSSIONS AND CONCLUSIONS

Back in 1999, Tim Lang stated that food policy “cannot be understood as an issue of consensus. It is, and almost always has been, a battleground of competing interests” (Lang, 1999: 217). These conflicting interests were starkly highlighted during the tractor protests. Far from promoting a ‘win-win’ logic, which invokes the concept of supposed food sovereignty – much like the Smithian invisible hand, assumed to systematise and effectively develop the agri-food system for all – one of the most significant outcomes of the protests was to bring into public debate the inherent lock-ins and trade-offs between different sustainability objectives within the food system (Herring, 2015). The European Parliament, recently elected for the 2024-2029 legislature, faces critical challenges regarding the future of the European food system. As the Strategic Dialogue on the Future of EU Agriculture acknowledges, the transition of agri-food systems inevitably involves conflicting interests and complex trade-offs, which can only be addressed through compromise (Strohschneider, 2024).

On the one hand, the results of the research show rather jagged and scattered demands and requests, in which economic grievances are juxtaposed with an unstable and rapidly changing geo-political context. On the other hand, while historically agricultural policies, especially at the national level, have been characterised by a rather close relationship between farmer unions and Ministries of Agriculture (Matthews, 2024b), today's negotiations and demands involve a series of new actors with different priorities, including environmental agencies and interest groups but also public health advocates and climate activists. At the same time, even at the European level relationships have become more complex, with the augmented role of the Parliament which gave rise to the so-called trilogue between Parliament, Commission and Council.

The results highlighted that most sentiments related to the ‘tractor protests’ were of positive polarity (57.2%), especially for the specialized media and MEPs. The prevailing positive sentiment is trust, followed by anticipation, two sentiments that suggest positive expectations for the improvement of the relationship between policies and farmers' conditions. Despite lower than positive sentiments, the prevalent negative feelings are anger and fear. These are expressed to a greater extent by commentators and journalists, confirming the coverage of the

climate of protest given by the media, characterized both by symbolic acts, slogans, demonstrations in the streets, tractor parades, and by more aggressive gestures, especially in France and in front of the headquarters of the European institutions.

Three different representations and nuances that the media have given to the protest have been provided by the clusters. The green cluster, mainly characterized by the specialized media, which expressed the highest percentage of positive sentiment, focuses on the aspects of environmental sustainability and the relative role of consumers and economic conditions. The word GMO also appears in this cluster, a sign of how the protest has also called for issues that have mature and shared legislation and debate, putting even opposing positions on the same scale. In fact, in Italy no GMO can be cultivated for commercial purposes as foreseen by the regulation of GMOs in the EU. The red cluster is predominantly neutral and the categories that most characterize it are journalists, social partners and MEPs. The lemmas appear less compact and therefore the discussion seems to have been more scattered and fragmented, focusing from time to time on specific points. However, it should be noted that the crucial words ‘protest’ and ‘tractor’ are found in this cluster, demonstrating how the discussion was rather broad and chaotic. The blue cluster, dominated by opinion leaders with negative sentiment polarity, is characterized by a strong relevance of sector organizations and the main social partners involved in the themes of agricultural and environmental policies. It is a very compact cluster, where a rather accentuated narrative is found on climate-environmental issues and the relative different positions expressed by subjects pursuing different purposes and interests.

Overall, it appears that the recent protest served as a means to refocus attention on a longstanding, unresolved issue in European agriculture and the CAP: the income level and income disparity compared to the rest of the economy. Economic sustainability is often seen as a prerequisite for a sector that can provide environmental and social public goods, but only when economic stability is ensured. Despite many years of CAP support, this income gap has not been closed or even reduced for small multifunctional farms, while larger industrial businesses, fully integrated into the global food supply chain, have often been overcompensated (Pierangeli *et al.*, 2024).

Another significant aspect emerging from the discussion is the evolving relationship between science and policy, as well as between science, knowledge, and information. One key issue relates to the role of the press and social media, which have played a notable role in the brief history of the protests. It is crucial

to question and explore, at various levels, the sensitive relationship between science, policy, and information. This is particularly important, as social media content does not adhere to traditional, more formal review processes and is driven solely by the opinions of individual users. However, during a particularly heated period, such as the protests, social media decisively influenced the debate, complementing or even replacing professional or institutional information sources. The second issue, closely connected to the first, concerns the 'sustainable-washing' trend, which seems to dominate discussions around new policies and consumer choices. It is difficult to reduce multidimensional sustainability to merely a marketing attribute to 'better sell' European products, only to abandon it when it becomes a real, tangible approach towards transitioning European agri-food systems and territories. For these reasons, the short-term 'easy wins' and the seemingly 'forgotten' tractor protests could ultimately result in a long-term lost battle for everyone.

AUTHOR CONTRIBUTIONS

Conceptualization, G.M. and R.H.; Methodology, M.V. and G.G.; Investigation, G.M., R.H., M.V. and G.G.; Writing – Original Draft, G.M., R.H., M.V.

REFERENCES

- Antošová I., Hazuchová N., Stávková J. (2021). Income situation of agricultural households of EU countries. *Agricultural Economics – Czech*, 67(4): 121-128. DOI: <https://doi.org/10.17221/474/2020-AGRICECON>.
- Cagliero R., Vassallo M., Pierangeli F., Pupo D'Andrea M.R., Monteleone A., Camaioni B., Tarangioli S. (2023). The Common Agricultural Policy 2023-27. How do Member States implement the new delivery model? *Italian Review of Agricultural Economics*, 78(1): 49-66. DOI: <https://doi.org/10.36253/rea-14318>.
- Cambria E., Das D., Bandyopadhyay S., Feraco A. (2017). *A Practical Guide to Sentiment Analysis*. Springer, 2017.
- Clark J. (2006). The institutional limits to multifunctional agriculture: subnational governance and regional systems of innovation. *Environment and Planning C: Government and Policy*, 24: 331-349. DOI: <https://doi.org/10.1068/c053>.
- De Castro P. (2020). The Common Agricultural Policy 2021-2027: a new history for European agriculture. *Italian Review of Agriculture Economics (REA)*, 75(3): 5-12. DOI: <https://doi.org/10.13128/rea-12703>.
- Ferroni F. (2024). Il dialogo strategico sul futuro dei sistemi agroalimentari nell'Unione europea tra sostenibilità economica, ambientale e sociale. *AE – Agricoltura Alimentazione Economia Ecologia*, n. 1/2024. ISSN 2036-9948.
- Finger R., El Benni N. (2021). Farm income in European agriculture: new perspectives on measurement and implications for policy evaluation. *European Review of Agricultural Economics*, 48(2): 253-265. DOI: <https://doi.org/10.1093/erae/jbab011>.
- Finger R., Fabry A., Kammer M., Candel J., Dalhaus T., Meemken E.M. (2024). Farmer Protests in Europe 2023-2024. *EuroChoices*. DOI: <https://doi.org/10.1111/1746-692X.12452>.
- Gupta V., Lehal G.S. (2009). A Survey of Text Mining Techniques and Applications. *Journal of Emerging Technologies in Web Intelligence*, 1(1). DOI: <https://doi.org/10.4304/jetwi.1.1.60-76>.
- Henke R. (eds.) (2004). *Verso il riconoscimento di un'agricoltura multifunzionale*. Teorie, politiche, strumenti. Edizioni Scientifiche Italiane, 2004.
- Henke R., Benos T., De Filippis F., Giua M., Pierangeli F., Pupo D'Andrea M.R. (2018). The new Common Agricultural Policy: How do Member States respond to flexibility? *Journal of Common Market Studies*, 56(2): 403-419. DOI: <https://doi.org/10.1111/jcms.12607>.
- Henke R., Sardone R. (2022). The 7th Italian Agricultural Census: new directions and legacies of the past. *Italian Review of Agricultural Economics*, 77(3): 67-75. DOI: <https://doi.org/10.36253/rea-13972>.
- Herring R.J. (2015). *How is food political? Market, state, and knowledge*. The Oxford handbook of food, politics, and society, p. 1-28.
- Hoekstra E., Fur H. (2024). *Gli Scioperi degli Agricoltori Costringono l'UE a Rivedere gli Obiettivi Climatici per il 2040*. GreenMarked, www.greenmarked.it.
- Kanter D.R., Musumba M., Wood S.L.R., Palm C., Antle J., Balvanera P., Dale V.H., Havlik P., Kline K.L., Scholes R.J., Thornton P., Titttonell P., Andelman S. (2018). Evaluating agricultural trade-offs in the age of sustainable development. *Agricultural Systems*, 163: 73-88. DOI: <https://doi.org/10.1016/j.agry.2016.09.010>.
- Illia L., Sonpar K., Bauer M.W. (2014). Applying Cooccurrence Text Analysis with ALCESTE to Studies of Impression Management. *British Journal of Management*, 25: 352-372. DOI: <https://doi.org/10.1111/j.1467-8551.2012.00842.x>.
- Lang T. (1999). Food Policy for the 21st Century: Can It Be Both Radical and Reasonable? In: Mustafa K., MacRae R., Mougeot L.J.A., Welsh J., *For Hunger-*

- Proof Cities*. International Development Research Centre, Ottawa, Canada. ISBN: 0-88936-882-1.
- Liu B. (2015). *Sentiment Analysis: Mining Opinions, Sentiments, and Emotions*. Cambridge University Press.
- Mandják T., Lavissière A., Hofmann J., Bouchery Y., Lavissière M.C., Faury O., Sohler R. (2019). Port marketing from a multidisciplinary perspective: A systematic literature review and lexicometric analysis. *Transport Policy*, 84: 50-72. DOI: <https://doi.org/10.1016/j.tranpol.2018.11.011>.
- Matthews A. (2024a). *What is actually happening with agricultural incomes?* www.capreform.eu
- Matthews A. (2024b). The origins and dimensions of protests. *Intereconomics*, 59(2): 83-87. DOI: <https://doi.org/10.2478/ie-2024-0018>.
- Mazzocchi G., Giarè F., Sardone R., Manetti I., Henke R., Giuca S., Borsotto P. (2023). Food (di)lemmas: disentangling the Italian Local Food Policy narratives. *Italian Review of Agricultural Economics*, 78(3). DOI: <https://doi.org/10.36253/rea-14511>.
- Mohammad S., Turney P. (2013). Crowdsourcing a Word-Emotion Association Lexicon. *Computational Intelligence*, 29(3): 436-465. DOI: <https://doi.org/10.1111/j.1467-8640.2012.00460.x>.
- Neogi A.S., Garg K.A., Mishra R.K., Dwivedi Y.K. (2021). Sentiment analysis and classification of Indian farmers' protest using twitter data. *International Journal of Information Management Data Insights*, 1(2), 100019. DOI: <https://doi.org/10.1016/j.jjime.2021.100019>.
- Pierangeli F., Henke R., Pupo D'Andrea M.R., Scardera A. (2024). *Effetti della PAC per i divari territoriali*. 15^a Conferenza Nazionale di Statistica: La statistica ufficiale al tempo dell'intelligenza artificiale, 3-4 luglio Roma, ISTAT.
- Ratinaud P. (2014). *IRAMUTEQ: Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires* [Computer software].
- R Core Team (2021). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/>.
- Singh A., Kalra N., Singh A., Sharma S. (2022). Sentiment analysis of Twitter data during Farmers' Protest in India through Machine Learning. *International Conference on Computer Science and Software Engineering (CSASE)*, Duhok, Iraq, 2022, pp. 121-126. DOI: <https://doi.org/10.1109/CSASE51777.2022.9759767>.
- Sotte F. (1997). Per un nuovo patto sociale tra gli agricoltori e la società. *QA - La Questione Agraria*, 65: 7-15.
- Sotte F. (2023). *La politica agricola europea. Storia e analisi*. Firenze University Press.
- Sree Sresta R.S., Pavan Kumar C.S., Roshini S. (2024). A Comprehensive Study of Farmer's Protests Through Advanced Sentiment Analysis. *International Conference on Inventive Computation Technologies (ICICT)*, Lalitpur, Nepal, pp. 18-28. DOI: <https://doi.org/10.1109/ICICT60155.2024.10545018>.
- Strohschneider P. (chair) (2024). *Strategic Dialogue on the future of EU agriculture - A shared prospect for farming and food in Europe*. European Commission, Brussels.
- Tiwari D., Nagpal B. (2022). KEAHT: A Knowledge-Enriched Attention-Based Hybrid Transformer Model for Social Sentiment Analysis. *New Gener. Comput.* 40: 1165-1202. DOI: <https://doi.org/10.1007/s00354-022-00182-2>.
- Van Huylenbroeck G., Vandermeulen V., Mettepenning E., Verspecht A. (2007). Multifunctionality of Agriculture: A Review of Definitions, Evidence and Instruments. *Living Reviews in Landscape Research*, 1(3). <http://creativecommons.org/licenses/by-nc-nd/2.0/de/>.
- X Developer Platform (2024). X APIv2 Basic. <https://developer.x.com/en/docs/twitter-api>.
- Younis E.M.G. (2015). Sentiment Analysis and Text Mining for Social Media Microblogs using Open-Source Tools: An Empirical Study. *International Journal of Computer Applications*, 112(5). DOI: <https://doi.org/10.5120/19665-1366>.

APPENDIX

Table A.1. Syllabus of the TM-C for cluster blue.

<i>Italian</i>	<i>English</i>
agricolo	agricultural
agricoltore	farmer
agroecologia	agroecology
aleequilibrium	Alessandro Leonardi (X account)
alimentare	food
ambientale	environmental
ansaambiente	information website (X account)
area	area
articolo	article
associazione	association
attuale	current
attuazione	implementation
azienda	company
aziende agricole	farms
bene come	well as
bersaglio	target
cambiamento	change
cambiamoagricoltura	Associations Coalition (literally: Let's Change Agriculture) (X account)
camillalaureti	Camilla Laureti (MEP) (X account)
cancellare	cancel
causa	cause
cedere	to give in
cia agricoltura	CIA agriculture (Farmers' Union) (X account)
città	city
cittadino	citizen
climatecrisis	climate crisis
climatico	climate
coldiretti	Coldiretti (Farmers' Union)
colpire	hit
confagricoltura	Confagricoltura (Farmers' Union) (X account)
copacogeca	COPA COGECA (trade association) (X account)
crisi	crisis
danno	harm
dedicare	to dedicate
deroga	derogation
eco schema/eco schemi	ecoscheme/ecoschemes
ecologico	ecological

<i>Italian</i>	<i>English</i>
effetto	effect
emissione	emission
ennesimo	umpteenth
essere	to be
essere suonare	to be to play
europainitalia	EU in Italy (X account)
fimianif	Fabio Fimiani (X account)
fonte	source
fossile	fossil
francescolollo1	Francesco Lollobrigida (Ministry of Agriculture)
grande	big
grave	serious
green deal	Green Deal
ignorare	to ignore
ilsalvagenteit	information website (X account)
impegno	commitment
impollinatori	pollinators
incredibile	incredible
iniquo	unfair
inquinante	polluting
intensivo	intensive
interesse	interest
interno	internal
invadere	invade
irresponsabile	irresponsible
italia	Italy
maggiore	greater
malessere	malaise
manifestare	to demonstrate
masgiansanti	Massimiliano Giansanti, President of Confagricoltura (one of the Farmers' Union) (X account)
medio	medium
mgmidu	Maria Grazia Midulla (Head of Climate and Energy, WWF Italy)
miliardo	billion
misura	measure
morire	to die
natura	nature
naturale	natural
obiettivo	objective
Opinionisti	Opinionists
ottenere	to obtain

<i>Italian</i>	<i>English</i>
padano	padanian
pagare	To pay
paolodecastro	Paolo De Castro (politician) (X account)
peggiore	to get worse
penalizzare	to penalize
pianura	plain
piccolo	small
politica agricola comune	Common Agricultural Policy
pressione	pressure
principale	principal
problema	problem
produzione	production
proprio	own
protestare	protest
ragione	reason
reddito	income
responsabilità	responsibility
rinvviare	to postpone
rinvio	postponement
risolvere	solve
rivolta	revolt
sapere	know
sbagliare	to be wrong
siccità	drought
sintesi	synthesis
soluzione	solution
strumentalizzare	to instrumentalize
strumentalizzazione	instrumentalization
subire	to suffer/to undergo
suolo	soil
sussidio	subsidy
taglio	cut
transizione	transition
ultimo	last
utilizzare	use
vittima	victim
volere	to want
vonderleyen	Ursula von der Leyen (Head of EU Commission) (X account)
wwfeu	WWF EU (X account)
wwfitalia	WWF Italy (X account)

Table A.2. Syllabus of the TM-C for cluster red.

<i>Italian</i>	<i>English</i>
acqua	water
agricoltore	farmer
agrifish	Agriculture and Fishing Council
agronotizie	AgroNotizie (magazine) (X account)
angelociocca	Angelo Ciocca (X account)
arare	to plow
ascoltare	to listen
cambiare	to change
campo	field
chiedere	to ask
cia	CIA (Farmers'Union) (X account)
commissario	commissioner
cosa	time
cristiano	christian
custode	guardian
danneggiare	to damage
decennio	decade
decisione	decision
esenzione	exemption
europa	Europe
fare	to do
fine	price
folle	crazy
giornalisti	journalists
giugno	June
governo	government
intervista	interview
irpef	income tax (IRPEF)
lega	Lega (political party)
legasalvini	Lega (political party) (X account)
legge	law
macron	Emmanuel Macron
maggioranza	majority
marcia	gear
mettere	to put
pac	CAP (Common Agricultural Policy)
parlamentare europeo	member of European Parliament
parlare	to talk
parti sociali	social partes
pesticida	pesticide
politico	politic/politician

<i>Italian</i>	<i>English</i>	<i>Italian</i>	<i>English</i>
porcia	Porcia (Italian small city)	confronto	comparison
prendere	to take	consumatore	consumer
presidente	president	consumo	consumption
prezzo	price	contadino	farmer
pronto	ready	dato	data
protesta	protest	diffondere	to spread
prova	proof/attempt	direttiva	directive
punto	point	diverso	different
raffaelaqua	Raffaella Quadretti (journalist) (X account)	economia	economy
risposta	answer	economico	economic
roma	Rome	ellyesse	Elly Schlein (X Account)
sera	evening	europa	Europe
sinistra	left	europeo	European
tempo	time	febbraio	February
terranuovaed	Terra Nuova edizioni (magazine) (X account)	finanziamento	financing
tornare	to return	garantire	to guarantee
trattore	tractor	giorno	day
ue	EU	impatto	impact
via	away	importante	important
		in cui	in which
		in modo	in a way
		incontro	meeting
		indicazionigeografiche	geographical indications
		iniziativa	initiative
		intervento	intervention
		lavorare	to work
		linea	line
		lotta	struggle
		media specializzati	specialized media
		mercato	market
		milano	Milan
		mondo	world
		multinazionale	multinational
		nazionale	national
		normativa	regulations
		nuovo	new
		ogm	genetically modified organism (GMO)
		parlamento	parliament
		parlamentare europeo	member of European Parliament
		parti sociali	social parties
		partecipare	to participate
		pdnetwork	PDnetwork (Italian Party) (X Account)
		per questo	because of this
		plenario	plenary
		possibile	possible
		pratico	practical
		primo	first
		progetto	project
		qualità	quality
		rafforzare	to strengthen
		reale	real

Table A.3. Syllabus of the TM-C for cluster green.

<i>Italian</i>	<i>English</i>
accadere	to happen
accordo	agreement
agroalimentare	agri-food
ambiente	environment
ansaterragusto	Ansa Terra e Gusto (magazine) (X account)
basare	to base
bio	biological
biodiversità	biodiversity
biologico	organic
bisognare	to need
buono	good
cambiamenticlimatici	Magazine (X account) (Literally: climate change)
campagna	countryside
cibo	food
commerciale	commercial
commissione	commission
concorrenza	competition
confagriassembleabruelles	Confagricoltura (Farmers' Union)
conferenza	conference
conferma	confirmation

<i>Italian</i>	<i>English</i>
relatore	speaker
rendere	to make
riguardare	to regard
rischio	risk
risultato	result
russo	Russian
seguire	to follow
servire	to serve
settore	sector
sleale	unfair
sociale	social
solidale	in solidarity
sostenere	hold up
sostenibile	sustainable
sostenibilità	sustainability
stampa	press
strategico	strategic
strumento	instrument
tenere	to hold
territorio	territory
tutela	protection
tutelare	to protect
unico	unique
valutazione	assessment
vino	wine
volta	time
voto	vote
