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Community structure and the behavior of transnational sustainability governors: Toward a multi-relational approach

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Abstract

Hundreds of transnational private governance organizations (TPGOs) have emerged in recent decades to govern social and environmental conditions of production using voluntary standards. A debate persists over whether the ties among different TPGOs and other organizations create a professional community that affects the behavior of TPGOs. To help resolve this debate, we analyze multiple ties among agriculture TPGOs to offer a more robust exploration of community structures and their potential effects for three forms of TPGO behavior – coordination, collaboration, and isomorphism. Our aggregate measure of ties reveals a thin community dominated by older TPGOs and TPGOs advancing a broad notion of sustainability that were created by Solidaridad, the World Wildlife Fund, and/or Unilever. The clearest community structures are built from ties that exhibit the *potential for not actual* collaboration, coordination, and isomorphism. Thus, while there exists convergence toward an emergent TPGO-community, obstacles remain to more intense behavioral effects for TPGOs.

Keywords: agriculture, policy community, private governance, social network analysis, sustainable development.

1. Introduction

Transnational private governance organizations (TPGOs) set standards, procedures, and governance models for various sustainability issues and global industries. They have become a prominent global governance mechanism to address environmental and social problems arising from business-as-usual practices in global supply chains. TPGOs like Utz and Fairtrade are increasing their impact on agricultural practices globally with growing numbers of certified farms, businesses endorsing their standards, and certified-product sales (Potts *et al.* 2014).

TPGOs, however, do not operate in isolation from each other. They interact with other TPGOs that are focused on either the same or different problems (Eberlein *et al.* 2014). Varied consequences flow from these interactions. Interactions may limit the undesirable effects of competition among TPGOs in the same sector or issue area (Fransen 2015). They may help TPGOs address problems that a single TPGO cannot address alone, such as land-use change and inconsistencies or duplications in auditing practices (Auld 2014a). They may act as transmission belts for policy diffusion and organizational convergence among TPGOs (Dingwerth & Pattberg 2009). As such, these interactions affect whether TPGOs solve the problems the actors that support them are keen to resolve. Interactions therefore represent a key characteristic of an emerging community of TPGOs – a self-aware grouping of individuals and organizations linked by shared practices and a sense of identity – that has the potential to greatly influence the aggregate impacts of TPGOs on global problems.

Existing research recognizes the importance of any such emerging TPGO-community for collective action featuring coordination and collaboration among organizations (Bartley & Smith 2010) and for the garnering of

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legitimacy and authority by individual TPGOs (Bernstein & Cashore 2007). Recent empirical work has sought to describe the *structure* of TPGO communities in different issues areas. By structure, we mean here the emergent characteristics of a group of organizations and individuals that affect the relationships that group members have with each other and their individual and collective behaviors. Studies measure different types of ties among actors, and find communities of slightly different shapes, sizes, and densities. The ties examined include intermediaries and interlocks (Bartley & Smith 2010), mutual references and membership in partnership organizations, (Green 2013), and mutual employment (Fransen *et al.* 2016).

These studies have two shortcomings. First, they often measure one type of tie to identify TPGO community structure. Yet different ties may identify different communities, which means this approach undermines efforts to robustly detect community structure among policymakers. Second, current studies on TPGOs, and beyond (cf. Heemskerk & Takes 2016), do not thoroughly conceptualize and justify how a given type of tie adequately measures the kind of social, political, or economic consequences they expect to flow from a latent community. As a result, different studies may mean different things when they refer to communities.

To resolve these two shortcomings, we investigate two research questions. We first ask a descriptive question: how are TPGOs interlinked? Describing the varied ties that link TPGOs then allows us to ask: What kinds of communities do these links create, and what consequences might these different communities have for TPGO behavior?

Our empirical case is the agriculture sector where we examine 16 TPGOs that advance overlapping attention to sustainability. Following recent literature and policy vocabulary (Bitzer *et al.* 2012; Marx & Wouters 2014), we understand sustainability-focused TPGOs to promote economic, and/or social, and/or environmental criteria for production. Agriculture is a useful sector for study because of the significant sustainable development challenges faced. Moreover, the overall density of agriculture TPGOs facilitates an exploration of different community structures and their potential consequences for TPGO behavior. Finally, in the agricultural sector there is a long pedigree of significant TPGO coordination challenges. This makes agriculture a useful sector in which to examine claims about the likelihood that TPGO communities increase in strength and undergird TPGO coordination and convergence.

We measure three types of ties among TPGOs: membership and linkages among TPGOs in meta-governance programs that aim to be intermediary organizations managing TPGO communities (cf. Adler 2008, p. 204; Provan & Kenis 2008); ongoing partnerships among TPGOs; and uptake and recognition of policy ideas and tools in the policy documents of various TPGOs. We combine these measures with the community structure identified by Fransen *et al.* (2016) through examination of the professional and educational backgrounds of all current staff and governors of TPGOs governing sustainability issues over a 10-year period. Conceptually, we distinguish ties as a *potential* for versus ties that *directly evidence* three forms of TPGO behavior – coordination, collaboration, and convergence toward similar policies (*isomorphism*). These distinctions help clarify whether communities conform to two conceptions: a thin community where political discord and varied organizational perspectives can persist, or a thick community with little political discord and common organizational perspectives (Djelic & Quack 2010).

This multi-relational empirical approach has several benefits. It descriptively does justice to the real-world complexity of links among organizations and professionals and the varied communities these ties may undergird. More significantly, it also allows us to explore more reliably whether the policy community structure identified makes it more or less likely that TPGOs at present behave in particular ways or in the future are likely to behave in particular ways. Are ties more likely to resolve coordination problems among competing TPGOs? Are ties likely to help address challenges resulting from the limited problem scope of TPGOs? Or might ties increase the likelihood of isomorphism toward a uniform perspective of sustainability? That is, the varied TPGO community structures identified through different ties have potential implications for how well TPGOs alone, and in cooperation with each other, address the problems that the actors initiating them hoped that they would.

Our analysis proceeds in nine parts. First, we review existing literature to justify the importance of our multi-relational approach. Second, we clarify our conception of community and our empirical strategy. Third, we deduce propositions for empirical explorations. Fourth, we explain methodological choices and the data gathered. Fifth, we describe our data and common characteristics of relationships. Sixth, we develop our empirical strategy for community detection. Seventh, we analyze the multi-relational TPGO network using social

network analytical terminology. Eighth, we discuss the implications of our empirical results. A final section concludes.

2. Communities in transnational private sustainability governance

Why should we care about the structure of TPGO communities? Two answers are apparent. A first is that community structure affects the nature and effectiveness of collective action aimed at addressing mutually identified problems. In this respect, different community structures serve as an independent variable explaining variation in collective action. Early literature implicitly examined this premise by assessing how pre-existing communities affected collective action that generated TPGOs. Consider two contrasting formation processes.

A first wave of agriculture TPGOs arose via local and diffusely structured communities that linked individuals and organizations exchanging ideas about the problems of industrialized and intensive forms of agriculture (Dankers & Liu 2003; Guthman 2004). In 1972, these national organizations working on organic agriculture launched the International Federation of Organic Agriculture Movements (IFOAM) in order to exchange information on organic practices and develop common principles (Langman 1992). Fairtrade certification is similarly rooted in a diffuse community based on the work of alternative trade organizations established on a small scale in Europe and North America since the 1950s. By 1997, the Fairtrade Labeling Organizations International (now Fairtrade International or FLO) was established and now coordinates the standards and labeling work of over a dozen national initiatives (Raynolds 2000).

A second TPGO formation process has involved a different community structure – one dominated by a few actors that decide to supply a TPGO alone or with a small group of partners. The World Wildlife Fund (WWF) has been prominent in this role; it has helped establish initiatives for commodities such as palm oil (Schouten & Glasbergen 2011), soy (Elgert 2012), and most recently, sugar and cotton (Sneyd 2014). Particular retailers, government development agencies, and American philanthropic foundations have also helped launch different TPGOs (Ponte 2014; Sneyd 2014).

Thus, in these two contrasting processes, communities of differing structures facilitated collective efforts to form standards, and later certification procedures, for organic, fair trade, and other sustainability-targeted forms of agriculture.

A second reason community structure matters is its role as a source of legitimacy for a TPGO. The evaluative judgments of the individuals and organizations comprising a TPGO community, it is argued (Bernstein & Cashore 2007; Black 2008), are the basis for the organization's legitimacy. In this respect, it is not just that actors turn to TPGOs as a solution to problems, but that once a TPGO exists, the organization will turn to external actors and community norms as a way to garner material and symbolic support such that the TPGO can claim legitimacy as a private rulemaker (Boström 2006). Different community structures can thus be expected to support varied norms and offer distinct material and symbolic resources to TPGOs. Features of the communities that provide TPGO support, such as levels of cohesion (Bartley 2003), the breadth of the community's policy concerns (Auld 2014b), or the different views of the problem and appropriate solutions held by its constituent members (Haedicke 2016), are hypothesized to affect programmatic operations such as rule implementation and effectiveness (Heilmayr & Lambin 2016).

The growing numbers of TPGOs means they are increasingly at the center of community structures, relative to other policymaking entities and actors holding a stake in sustainable agriculture. Studies are now examining whether community structures influence the interactive effects of TPGOs on sustainable production, rather than studying TPGO effects on production in isolation from one another (Eberlein *et al.* 2014). Thus, unlike the literature that examined the features of pre-existing communities or communities external to TPGOs as, respectively, the basis for collective action or legitimacy, it is increasingly necessary to understand how ties *among* TPGOs create communities that may themselves facilitate collective action or shape organizational legitimacy.

Consider first collective action. The proliferation of TPGOs complicates collective action. Competition among TPGOs that focus on similar policy issues and industries may stimulate revisions in standard setting and governance relevant for effective and legitimate policymaking and governance (Overdevest 2010). Competition may also lead to implementation challenges, rising costs, and confusion among stakeholders (cf. Marx & Wouters 2014; Fransen 2015). In addition, when TPGOs in the same industries have different policy foci they may be less

productive at addressing the sustainability issues that surpass their respective problem scopes (Auld 2014a). Embedding TPGOs in communities can therefore potentially facilitate collaborative responses to these challenges (Fransen et al. 2016).

With legitimacy, external communities may assist TPGOs to establish and maintain legitimacy from key constituencies. For this reason, community structures can engender common norms of what is considered appropriate TPGO governance across TPGOs (Dingwerth & Pattberg 2009; Bernstein 2011).

In contemporary TPGO policymaking, therefore, describing the structure of communities may help us assess the possibility of collective action to address particular problems and the nature of TPGO legitimation dynamics. Yet two challenges limit our ability to understand how community structures affect these two outcomes. First, current work on TPGO interactions and community measures different types of ties. Second, how these measures conceptually relate to different TPGO behaviors and behavioral goals is rarely illustrated. Underlying these limitations, we argue, is an absence of careful attention to how communities are conceptualized and operationalized. We begin to resolve this fundamental shortcoming in the following section.

3. Conceptualizing and measuring transnational private governance organization (TPGO) communities

In an influential volume, Djelic and Quack (2010, pp. 3–21) argue that as the act of governing transcends nation-states, it is increasingly likely that communities of professionals spanning borders may shape transnational governance. Such professionals may include persons belonging to public as well as private organizations that are working for for-profit or non-profit goals, as experts, interest representatives, or bureaucrats. According to Djelic and Quack, these professionals can be considered members of a community once the following necessary attributes are in place:

...mutual orientation of members, articulated around a common identity and/or a common project; a sense of reciprocal dependence; a form of active engagement and involvement from at least a minority of members; [...] translating into a sustained sense of belonging. (2010, p. 10)

Following Weber et al., they argue that communities have a *relational* and a *symbolic* component, and can be *thinner* or *thicker* where the necessary attributes they identify play a role to greater or lesser degrees. Community building is aided by but does not require direct contact between people and organizations. A shared sense of destiny can emerge from information flows that are not accompanied by direct exchange between people. Accordingly, similarity and homogeneity may be more or less prevalent among the actors constituting a community (Djelic & Quack 2010, p. 12). In DiMaggio and Powell's (1983) terms, isomorphism may occur in terms of increasing similarity in policies and perspectives on policies among community members.

In emphasizing variation in the thickness of communities, Djelic and Quack mirror understandings of community in other political science fields, including studies of corporatism and national public policy (Jordan 1990; Smith 1991) or epistemic communities in international relations (Haas 1992). In the former literature, communities are also distinguished according to the degree to which these are more or less cohesive in ideological or political orientation, the degree to which these are able to spur common political projects, produce isomorphic policy effects among their members, or override the interests of individual community members relative to the community interest. In thinner communities, political discord remains and consensus may effectively be minimal (Smith 1991). In thicker communities, isomorphism prevails (Rhodes 1988; Blom-Hansen 1997).

In a chapter for the Djelic and Quack volume, Bartley and Smith (2010) analyze ties among TPGOs and adopt the term *transnational community of practice*. Following Adler (2005), a community for them is a “set of actors involved in a joint enterprise that is constantly being renegotiated by its members and held together through relationships of mutual engagement” (Bartley & Smith 2010, p. 351). Bartley and Smith hold that within this community “cooperation and growing coherence exist alongside conflict and debate” (2010, p. 348). Yet they note that “[e]ven representatives of competing certification initiatives have engaged in loose forms of cooperation” (Bartley & Smith 2010, p. 348).

As such, Bartley and Smith use a thinner version of community than the convergent community type referred to by Dingwerth and Pattberg or Bernstein and Cashore.¹ Empirically, Bartley and Smith measure ties as cross-

references in policy documents on websites and individuals in 2001 and 2006. They claim that initially, certifying TPGOs emerge out of smaller, relatively disparate communities with varying political commitments. However, increasing linkages among these previously disparate communities through professional interactions offers a structure for the emergence of a transnational community of practice.

Other recent work addresses TPGO community structures, sometimes invoking the community concept explicitly, sometimes not. Certain studies reinforce Bartley and Smith's findings (Green 2013; Henriksen 2014; Henriksen & Seabrooke 2015), but others propose a slightly different diagnosis. Bitzer *et al.* (2012), for instance, find limited ties among agriculture TPGOs measured as common engagement in cross-sectoral partnerships to promote sustainable cocoa. According to these authors, this absence of ties signifies competitive concerns. Similarly, Fransen *et al.* (2016) attempt to detect communities in the ties of agriculture TPGOs, analyzing links through current and past employment of all known professionals (board and non-board) working for TPGOs. They find scarcely any community: neither across TPGOs focused on different sectors, TPGOs focused on similar sectors or sustainability issues, nor among TPGOs with similar sustainability problem definitions or similar evolutionary histories.

Within these studies, connections are usually measured with one type of tie, which may be analyzed at different levels (i.e., individual vs. organization). This is problematic as community structures may be tie specific and each tie might be idiosyncratic in terms of the organizational goals, resources, and behavioral context concerned. Consequently, as experts on social network analysis observe, reliance on one type of tie raises the risk that any inference drawn will be insufficiently grounded in the context of social and political action of interest to the researcher (Kilduff & Brass 2010).

We therefore argue that the structure of TPGO communities should be assessed via multiple types of ties. To move in this direction, we draw theoretically on Djelic and Quack's useful distinction among relational and symbolic dimensions of community structure in transnational governance, and on their idea that communities may be thicker or thinner.

We seek to first distinguish among socio-relational ties, in terms of their ability to constitute thicker or thinner communities. In our view, if we want to capture ties constituting thicker communities, we need to look at *actual* ongoing collaboration and coordination among TPGOs. This means substantive policy exchange and a publicly stated commitment to resolve issues together. In this way TPGOs show collective action at work.

Turning to the *potential* for collaboration, coordination, and isomorphism among TPGOs, we treat these as thinner kinds of links among community members, because these do not yet signify substantive agreement or alignment. They only establish connections that imply exchange of a varied and not specified nature among the organizations and their employees. As literature on professional networks and communities argues, this can be done in two ways. A first approach examines *intermediary organizations* that seek to bring TPGOs closer together and have them exchange ideas, build trust, and encourage collaborative projects and isomorphism (cf. Adler 2008; Provan & Kenis 2008). We therefore examine TPGO immersion in so-called meta-governance organizations like the Global Social Compliance Programme, the Dutch Sustainable Trade Initiative (IDH) or the Ethical Tea Partnership (Loconto & Foulleux 2014; Fransen 2015). In these initiatives, TPGOs are invited to coordinate; their participation implies the *aspiration* to look for ways to cross-fertilize. We also include organizations affiliated with the International Social and Environmental Accreditation and Labeling (ISEAL) Alliance. The vast majority of these organizations have subscriber or associate membership status with ISEAL. This means they have a similar *aspirational* relation to collaboration and isomorphism as a result of mutual adjustment among TPGOs as the participants in aforementioned initiatives. Participation in these organizations does not necessarily serve as direct evidence of coordination, collaboration, or isomorphism among TPGOs, because this is not a requirement for participation.

A second approach treats individuals as intermediaries among organizations. Thus, we examine links among the employees and board members of TPGOs through current employment or board interlocks and through past employment (cf. Heemskerck & Takes 2016). We also conceive of this as a socio-relational tie that should capture *the potential* to exchange ideas and build trust among TPGO professionals. These personal ties could be stepping-stones to *potential* policy coordination, collaboration, and isomorphic effects. They could even be strategically viewed as such, particularly when it comes to board-level ties. But there is no certainty that these ties will lead to substantive policy interactions.

Turning to Djelic and Quack's idea of *symbolic ties* – ties that denote isomorphism – we propose that the most comprehensive and systematic way to gauge these ties is to investigate references in standard policies of TPGOs to other TPGOs or to similar third party sources or organizations. We expect these ties to capture *actual* isomorphic effects, as they portray similarity in describing what sustainability means, and/or similarity in which organizations receive praise as informing a particular perspective on sustainability policy.

We are agnostic as to whether we should interpret these links as thin or thick ties. On the one hand, a link constituted through a similar reference to a United Nations (UN) document may mean that both TPGOs subscribe to a very generic policy idea or hope that people think of a TPGO's work as being related to the UN.² On the other hand, one could argue that even the name checking of the same third-party, such as an intergovernmental organization treaty text or a scientific institute's definition, is significant. Even in this minimal gesture, TPGOs have a substantive similarity, linking an idea to a similar epistemic and/or political source, and agreeing on a similar source for authority. In any event, irrespective of the precise character of this tie, we include it in our analysis because of our interest in variation among different ties that have been previously investigated by researchers to describe TPGO policymaking communities.

Table 1 summarizes these indicators of community structure, their characteristics, and their theoretical implications for TPGO behavior. We expect that different types of ties will capture different processes of community formation among TPGOs; consequently, they should have different implications for the policies and practices of TPGOs. Some are relevant for isomorphic effects, some for collaboration and coordination among TPGOs; others are relevant for all categories of TPGO interactive effects.

As discussed, TPGO community structures can be interpreted descriptively for their consequences for both legitimation dynamics and for TPGO collective action potential. We focus on the latter, because reporting on both collective action and legitimacy would prove too cumbersome and because we believe coordination problems have more acute implications for TPGO policymaking. However, our analysis will focus on one category of overlap between collective action-focused and legitimacy-focused studies of communities: increased similarity of policies as a result of mutual references, which signifies both collaborative potential and legitimation among TPGOs. Future studies should focus on other aspects of legitimation dynamics.

4. Expectations of TPGO community structure

Building on the distinctions set out in the previous section, we develop *descriptive* propositions that specify which community structures we expect to find in the empirical analysis. By structure, we mean the character and extent of ties that exist among the individuals and organizations identified in our empirical analysis. We know from social network analysis that both the detectability and the composition of community structure may depend on the ties investigated. Communities are more *detectable* to the extent that groups of actors have higher connectivity *within* their group and lower connectivity *across* groups. Higher detectability thus means that it is easier to

Table 1 Different community indicators (ties among TPGOs), their characteristics, and implications

Community indicator (tie)	Characteristic of tie	Parties to tie	Implication for coordination/collaboration	Implication for isomorphic effects
Partnerships/collaborations	Socio-relational; "Thick"	TPGOs and other organizations	Actual	Potential
Shared meta-governance membership	Socio-relational; "Thin"	TPGOs, meta-governance organizations, and other organizations	Potential	Potential
Employment ties	Socio-relational; "Thin"	Persons, TPGOs, and other organizations	Potential	Potential
Cross-references in policy documents	Symbolic	TPGOs and other organizations	Potential	Actual (but degree unknown)

TPGO, transnational private governance organization.

discern distinct groups based on the observed ties. On the other hand, *composition* captures the TPGO and organizational membership of specific communities within each type of relationship. Generally, we expect variation in detectability and composition to be particularly pronounced when we have theoretical reasons to believe different types of ties will mean different things for the behavior of TPGOs. On this basis, we propose:

Hypothesis 1: The detectability and composition of communities are tie specific.

Turning to the specific nature of TPGO communities, the literature provides different explanations for interactions among TPGOs, as driven by rational-economic calculations (Prakash & Potoski 2007), political tensions (Bartley 2007), and/or sociological-ideational forces (Bernstein & Cashore 2007). TPGOs are therefore seen respectively as either self-interested organizations, embodiments of a political compromise among the interest groups driving these organizations, or institutionalizations of a norm. An integrative strand in the literature claims that all of these factors matter to some degree in understanding TPGOs (Bartley & Smith 2010; Reinecke *et al.* 2012; Turcotte *et al.* 2014). In this view, TPGOs are torn between ideological and material motives and cooperative and competitive impulses when engaging peer organizations. Moreover, TPGO communities exhibit both collaborative and competitive characteristics among organizations, and include ideological affinities and controversies among policymakers and professionals.

These different views lead to different expectations about the long-run structure of communities and their influence on TPGO behavior. However, in the shorter run, we hypothesize, following Reinecke *et al.* (2012), that community structure is more likely to comprise thinner ties among TPGOs that do not automatically imply significant policy exchange and adjustments. We expect to observe these ties because TPGOs will want to protect their organizational survival and their core ideological commitments. Thus in looking at different socio-relational ties among TPGOs we expect:

Hypothesis 2: For socio-relational ties, communities are more detectable for thinner types of TPGO ties than thicker ones.

We present rival propositions on the relevance of symbolic ties following our agnostic perspective on the character of these ties (as explained in the previous section). In one scenario these ties should be sparser. Here, the isomorphic behavior of TPGOs – like socio-relational thick ties – involves careful weighing of organizational interests and the ideological positions of the TPGO relative to an external environment of (competing) TPGOs and other organizations (cf. Reinecke *et al.* 2012). In another scenario, by contrast, these ties are expected to be more numerous because TPGOs name check other organizations with relative ease (cf. Bartley & Smith 2010). We thus expect:

Hypothesis 3a: Symbolic ties are sparser than socio-relational thin ties.

or

Hypothesis 3b: Symbolic ties are denser than socio-relational thin ties.

We know of no theoretical reason to expect a priori why one of the above two expectations should trump the other. We therefore treat the issue as an empirical question.

These propositions focus our attention on the degree to which TPGO-community structure may make TPGOs adopt coordinative, collaborative, and/or isomorphic behaviors. Where few ties, or mostly thin ties, are identified, there is at present little sign of and little potential in the future for collaboration to occur, compared to a situation where a lot of ties and also many thick ties are found.

5. Research design, data, and definitions

TPGOs exist in multiple sectors. Estimates indicate there might be several hundred in operation around the world (International Trade Centre 2016). We focus on TPGOs active in agriculture because, first, agriculture activities are crucial for the socio-economic and environmental challenges addressed by contemporary governmental and non-governmental policymakers. Second, it is a sector with many different TPGOs that are assumed to compete in the market and/or struggle over the appropriate definition and implementation of sustainability policies

(Reinecke *et al.* 2012; Auld 2014a). It is therefore a useful field to study in light of our ambition to develop a more precise understanding of what ties among TPGOs, and possibly community structure, may look like. Third, private governance in agriculture has a relatively long history, and clear challenges to do with coordination and convergence exist that TPGOs should address. This means that it is a sector that has characteristics consistent with projective theories that predict a TPGO policy community should arise there, with members of such a community addressing coordination challenges (Bernstein & Cashore 2007). Our analysis therefore may refine the empirical identification of any such transnational communities and their consequence for future coordinative, collaborative, and isomorphic behaviors of TPGOs.

In sum, understanding TPGO community structure in agriculture is of political and theoretical importance. Although we cannot assume that our findings for this sector are representative of TPGOs as a whole, our results should serve as the basis for hypothesizing about their implications for TPGOs focusing on other sectors.

Agriculture is broadly understood to include flowers and cotton next to food and energy crops. We do however limit our analysis to land-based production, and we exclude fisheries and aquaculture. To prevent this definition driving results, we examine community structures for agriculture as a whole and for subsets of standards that may plausibly constitute smaller communities because of a similar crop or issue focus. National standard organizations that are affiliated with these TPGOs surface in our analysis if TPGOs have ties with them. We select *transnational* private governance organizations for our sample because our interest is in the structure of transnational policy communities.

Sustainability standards are understood to cover economic, social, and environmental criteria for agricultural production (Bitzer *et al.* 2012; Marx & Wouters 2014). This is consistent with the Brundtland Commission's broad definition of sustainable development covering economic, social, and/or environmental components.

Our interest is in communities of and around policymakers. By *policymakers*, we mean individuals that formulate, decide among, or implement the policies of a TPGO (Fransen *et al.* 2016). We define *community structure* as the emergent characteristics of a group of organizations and individuals that affect the relationships that group members have with each other and their individual and collective behaviors.

We adopt the method used by Fransen *et al.* (2016) as a baseline for determining the TPGO population. They focused on TPGOs linked by common employees, using data from online resumes between 2002 and 2012 (i.e. the employment ties we describe in Table 1). Their cases are a more appropriate baseline than Bartley and Smith's (2010) study of certification programs, as these latter authors excluded TPGOs that do not use certificates even if they set voluntary sustainability standards. Our approach leads to a more exhaustive case selection than other studies that include only a subset of agriculture TPGOs (Bitzer *et al.* 2012; Henriksen 2014; Henriksen & Seabrooke 2015).

The selection made by Fransen *et al.* was based on previous studies (see, in particular, Reynolds 2000; Auld 2010; Fuchs & Kalfagianni 2010; Ponte 2014), and on interviews with TPGO and business professionals conducted in 2010–2012. Our selection does exclude some organizations. Five organizations were excluded because they offer little or no public information on policies, policymakers, membership, activities, and impact, which raises questions about their policy relevance. Hence, we believe the TPGOs included cover the vast majority of transnationally focused governance organizations in agriculture. This enables us to describe and infer about TPGOs in the agricultural sector as a whole (see Table 2).³

In the table we present a couple of categories of variation among TPGOs in terms of their history, policy focus, and organizational characteristics. We first adopt the categorization of TPGOs used by Fransen *et al.* (2016): the *sustainability problem definition* provided by the TPGO is captured as: Environmental Farming Practices, Food Safety, Farm Level Comprehensive Standard, Conservation/Biodiversity, Equitable Development, Systemic Climate Change, and Labor Standard. This reveals variation in how sustainable agriculture is perceived and what the mission of the TPGO is. Second, we code for the *product focus* of the TPGOs, so that we are able to judge which industries TPGOs focus on, and to what degree such focus may overlap. Third the *development histories* are coded as: Consumer-local Producer Movement-driven, Producer-driven, Technical Coordination Service Firm-driven, Multinational Brand/Retail with International Non-governmental Organization (NGO) Collaboration, Multinational Brand/Retail-driven, and Environmentalists/Science-driven. We do this because variation in this history may say something about the degree to which TPGO policymakers consider their organizations as more or less similar. Next to this, we report on the TPGO's head office, the existence of subsidiary and

Table 2 Key TPGO network and sustainability characteristics

TPGO	Sustainability problem definition	Product focus	Development history	Year of establishment	Head office	Subsidiary offices	No. of identified employees
IFOAM	Environmental farming practices	Food consumer products	Consumer-local producer movement	1972	Bonn	Rome, plus region offices in Africa, Latin-America, North America	34
Utz	Farm-level comprehensive standard	Food consumer products	Multinational brand/retail with international NGO	1997	Amsterdam	—	77
Rainforest Alliance	Conservation/Biodiversity	Food consumer products	Environmentalists/Science	1987	New York	Subsidiaries in US; regional offices in West and East Africa, Europe, Latin America, Southeast Asia	25
Better Cotton	Farm-level comprehensive standard	Cotton	Multinational brand/retail with international NGO	2005	Geneva	London, plus regional offices in North America, East Asia, South Asia, Turkey	63
SMBC	Conservation/Biodiversity	Food consumer products	Environmentalists/Science	1998	Washington DC	—	9
4C	Farm-level baseline standard	Food consumer products	Multinational brand/retail with international NGO	2002	Bonn	—	8
FLO	Equitable development	Food consumer products	Consumer-local producer movement	1997	Bonn	31 national members	75
CmiA	Equitable development	Cotton	Multinational brand/retail	2005	Hamburg	—	16
Flower Label	Labor standard	Flowers	Multinational brand/retail	1998	Cologne	—	8
RTRS	Farm-level baseline standard	Food ingredients	Multinational brand/retail with international NGO	2005	Buenos Aires	—	21
RSPO	Farm-level baseline standard	Food ingredients	Multinational brand/retail with international NGO	2002	Kuala Lumpur	Jakarta	25
RSB	Farm-level comprehensive standard	Energy	Multinational brand/retail with international NGO	2006	Geneva	—	24

(Continues)

Table 2 Continued

TPGO	Sustainability problem definition	Product focus	Development history	Year of establishment	Head office	Subsidiary offices	No. of identified employees
SAI	Labor standard	Food consumer products	Multinational brand/retail with international NGO	1997	New York	—	21
ISCC	Systemic climate change	Energy	Technical coordination service firm	2010	Cologne	—	6
MPS	Environmental farming practices	Flowers	Producer	1997	Honselerdijk	—	1
Florimark	Farm-level comprehensive standard	Food ingredients	Multinational brand/retail with International NGO	2005	London	—	6

Source: Adapted from Fransen *et al.* (2016). CmiA, Cotton Made in Africa; FLO, Fairtrade International; IFOAM, International Federation of Organic Agriculture Movements; ISCC, International Sustainability & Carbon Certification; NGO, non-governmental organization; RPSO, Roundtable on Sustainable Palm Oil; RSB, Roundtable on Sustainable Biomaterials; RTRS, Round Table Responsible Soy; SAI, Social Accountability International; SMBC, Smithsonian Migratory Bird Center; TPGO, transnational private governance organization.

regional offices, and the number of employees of the TPGO that could be identified, signaling the size of the organization, its geographic locations and geographic scope. Once again, this allows us to see similarities and differences across the sample.

To study communities, we examine four different types of ties between the 16 TPGOs. We examine the first relationship, the existence of actual *partnerships and collaborations*, by searching all of the available TPGO online documentation in early 2015, including documents presenting policies, annual reports, and newsfeeds. Depending on the degree to which TPGOs present such information in an integrated manner, we therefore examine one to three documents per TPGO. We use these documents to identify links among TPGOs, and between TPGOs and other organizations involved in sustainable agriculture, including NGOs, governments, international organizations, businesses, and academic institutes (cf. Marx & Wouters 2014). We observe that some partnerships may be more codified and institutionalized through documentation establishing longer-term commitments of signatory parties, while others are more flexible and have shorter time horizons. However, document data do not allow us to neatly distinguish between more “fixed” or “loose” types of interactions. We therefore code all of these ties as *partnerships and collaborations*. As a result, our analysis may somewhat inflate the significance of collaborations between TPGOs (and other parties). We do, however, discount businesses using the TPGO for compliance in supply chains, and membership of a meta-governance initiative. The latter is captured in the *meta-governance* network (see Table 1); the former implies using and endorsing the TPGO rather than partnering with it on a specific topic.

Second, using online website participation information from early 2015 provided by the ISEAL Alliance, the Global Social Compliance Programme, the Ethical Tea Partnership, the IDH, the Global Food Safety Initiative (GFSI), the World Cocoa Foundation, and the CEN Cocoa Roundtable, we constructed a two-mode *meta-governance* network which captures the participation of TPGOs, NGOs, governments, intergovernmental organizations, academic institutes, and businesses in the seven meta-governance initiatives. Ties examined here include membership and governance roles in meta-governance, as well as voluntarily subjecting standards and policies to equivalence processes so that standards become comparable. We examine one website page per meta-governance initiative. We aim for completeness in our selection of initiatives that aim to act as intermediary organizations meta-governing TPGOs and are focused on agro-commodities in 2015.

Third, *employment ties* is taken from Fransen *et al.* (2016). It is a network of TPGO employees (in 2012) and organizations that these employees were previously or remain affiliated with, based on an analysis of the online resumes of the TPGO employees. The authors were able to retrieve information about 74 percent of the employees they identified, a coverage considered appropriate for social network analysis purposes, although the results might be slightly skewed toward employees with multiple responsibilities or changing jobs across borders and organizations.

Fourth, like previous research efforts (Bartley & Smith 2010; Green 2013), we analyze TPGO policy documents from early 2015 for *references* to other organizations as the basis for the TPGO’s policies. We structurally compare documents detailing prevailing standard-setting policies. This includes the following categories of documents that are available online and that are comprehensive in their coverage of TPGO operations (and functionally similar across the sample) in verifying compliance with sustainability requirements: substantive requirements for businesses and how these should be weighted, auditing policies, policies assuring the origin of a product, and policies regarding the TPGO’s internal governance activities. We create – hand-coded – the list of references bottom up, listing each reference to an organization as it appears in a relevant TPGO policy document, but not counting multiple references to the same idea or policy of an organization within a TPGO policy document set. Once again, depending on the degree to which TPGOs integrate these policy descriptions into one, or spread them across various documents, we analyze one to four policy documents per TPGO. This coding strategy is exhaustive, including all of the mentioned partners of a TPGO. It should be kept in mind, however, that the inclusiveness of the coding strategy may induce overestimated sparseness in the reference network to the extent that partners are trivial to inter-TPGO collaborations.

We report on measures of these cross-references per organization (including all mentioned TPGO policy documents), while qualitatively examining disaggregate measures where we separate specific categories of standard documents describing appropriate business conduct from documents detailing auditing policy, assurance, and internal TPGO-governance. We code references to different policies and ideas for organizational sub-units within

the same organization as it occurred in a TPGO policy document set (specifically the UN, ILO, the International Organization for Standardization [ISO], and the European Union [EU]). For the UN, we differentiated for example between the Development Programme, Conference on Trade and Development or Human Rights Council. In the analyses, however, we use only a TPGO's (non-)reference to the overall organization, rather than the sub-unit of this organization. This ensures comparability to other organizations, and theoretically, we expect the organization as a whole, rather than the sub-units, to be associated with the community indicators.

We use the organizations' online profiles to divide the *organizations* with ties to TPGOs into three generic groups: Government and Politics; Non-profit Private; and Business.⁴ Based on these data and distinctions we move to an examination of relationship characteristics.

6. Relationship characteristics, data manipulation, and network concepts

Our complete dataset has several unique features. First, except for the meta-governance relationship, information on ties between organizations is based solely on the so-called *ego-networks* of TPGOs (cf. Wasserman & Faust 1994, p. 41). That is, we do not have information on the employment ties, reference behavior, and partnerships of *non*-TPGO organizations to the extent that these links do not involve the 16 core TPGOs. Second, the meta-governance and employment-tie relationships are *two-mode* (bipartite) networks (cf. Wasserman & Faust 1994, p. 39): they involve nodes of two non-overlapping subsets of actors (meta-governance institutions and member organizations, and employees and organizations, respectively). Moreover, one can argue that all types of relations we observe are in fact two-mode in the sense that they consist of two fundamentally different types of actors: TPGOs and other organizations such as businesses, international organizations, and NGOs.

Figure 1 illustrates the structure and data manipulation of the four types of relationships in stylized form. On the left hand side, the original data structure is shown for each of the four relationship types, involving actors of four different, non-overlapping subsets: TPGOs (T), meta-governance institutions (M), other organizations (O), and employees (E). We reduce the original data for each type into a two-mode network consisting of ties between TPGOs and other organizations. This manipulation facilitates comparison across relationship types and the computation of network statistics.

For example, in the relationship based on meta-governance membership, there are originally three types of actors: TPGOs, meta-governance institutions, and other organizations. In Figure 1, T_2 and O_1 are joint members of three different meta-governance institutions (M_1 , M_2 , and M_3). Hence, in the two-mode network derived from the original data, the relationship between T_2 and O_1 has a value of "3." Note that only two types of actors exist in the two-mode networks (in this example, TPGOs and other organizations), and that any tie is always between two actors of different subsets, never between two actors of the same subset. Also, the two-mode meta-governance and employment ties networks are *valued* (cf. Wasserman & Faust 1994, p. 140). That is, the weight of a tie can be more than one: it constitutes the number of co-memberships in the seven meta-governance institutions and the number of shared employees, respectively. The two-mode networks for referencing and cooperation and partnership are non-valued. For example, a partnership between a TPGO and another organization either exists or does not.

The descriptive statistics of the networks already tell us something about community structure (Table 3). There are 781 unique organizations that play a role in the transnational governance of sustainable agriculture (including our initial selection of 16 TPGOs).⁵ This is less than the sum of unique organizations across relationship types, as the same organization may play a role in multiple relationship types. Not surprisingly, the network of *cooperation and partnership* is smallest: arguably, setting up a formal strategic partnership implies the most effort on the part of a TPGO, limiting the maximum number of partnerships that can be handled. Still, the TPGOs collectively engage with 246 unique organizations across the seven meta-governance institutions they participate in.⁶ The *referencing* relationship network only included 126 unique organizations. Apparently, TPGOs carefully consider the organizations they cite in their policy documents.

The most central actors also vary across relationship type. Actor centrality is captured by the measure *degree centrality* (Wasserman & Faust 1994, p. 178), which has two manifestations in our data. For the non-valued networks, it is simply the count of an actor's number of ties. For valued networks, it is the sum of all tie weights (Barrat et al. 2004). Because here we are interested in ties of TPGOs, Table 3 reports the degree centrality of TPGOs only. Table 3 reports both the average degree centrality in the different networks across TPGOs and the

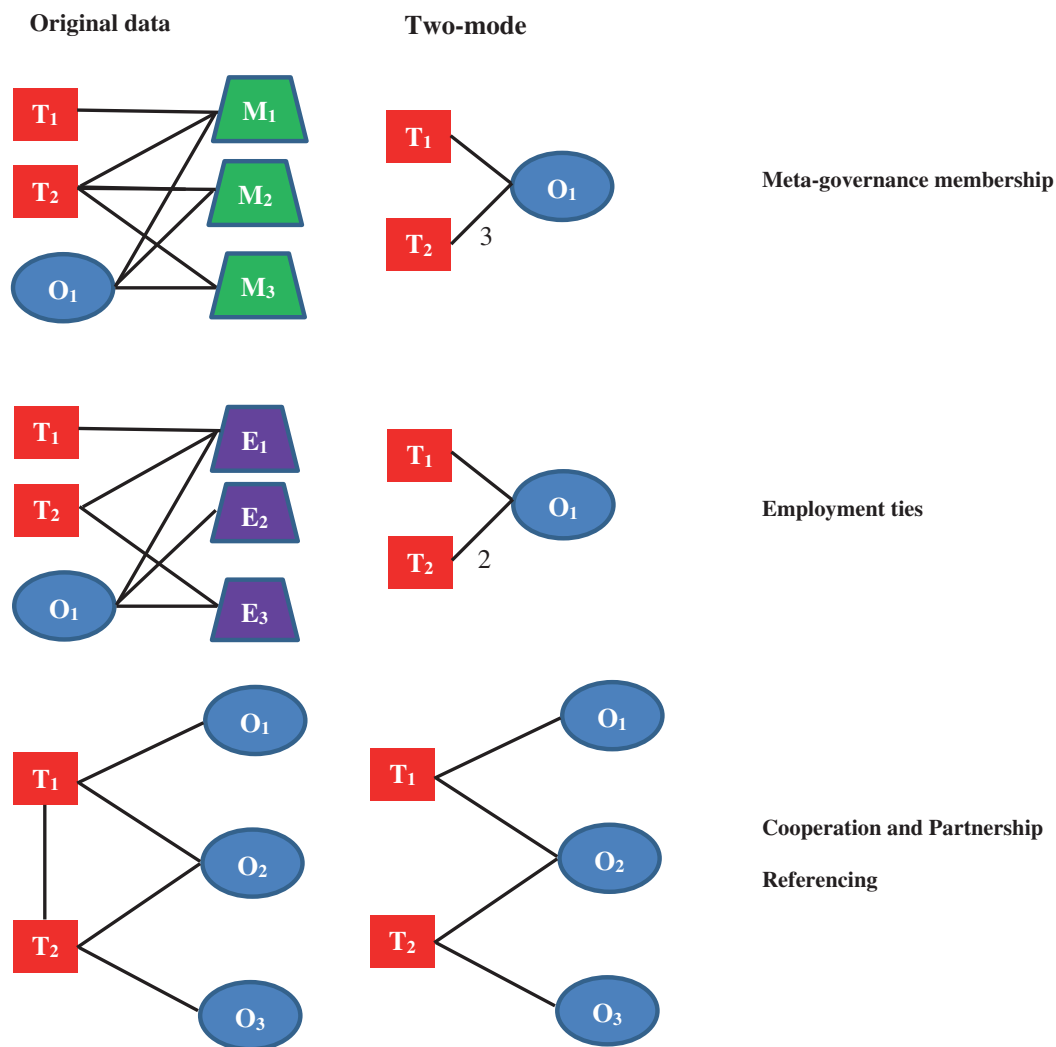


Figure 1 Structure of the four relationship ties. Numbers represent tie weight. All ties are undirected and have a value of 1, unless otherwise indicated. (■) TPGO (T), (●) Organization (O), (▲) Employee (E), and (▴) Meta-governance institution (M)

ranking “top-three” actors. In addition, Table 3 provides the *network density*, corresponding to the average value of pairwise ties (Wasserman & Faust 1994, p. 315).

When we look at the degree-centrality ranking, Utz stands out as a top-three central actor for three relationship types; however, Utz never ranks first for any one type of relationship in the networks. The average degree centrality is largest for meta-governance membership: on average, a TPGO has 76.2 co-memberships with other organizations across the seven meta-governance outfits. The least TPGO-ties are found for actual cooperation and partnership, on average 8.6. Overall, we observe that the density values for the various networks indicate that the networks are rather sparse.

Table 3 elucidates that organizational centrality in sustainable agriculture is highly dependent on the tie one assesses. Hence, conclusions based on single ties are biased to the extent that they make claims about the TPGO structure as a whole. More detailed empirical examination of TPGO community structure follows in the next two sections.

7. A network analytical approach to detecting communities: Modularity Q

We outlined how the content of a relationship is expected to increase or decrease the likelihood of detecting communities in the theoretical section (cf. Table 1). To test the hypotheses, we need a way to operationalize the

Table 3 Descriptive statistics of four relationship types in sustainable agriculture

Variable	Two-mode (undirected)			
	Cooperation and Partnership	Meta-governance membership	Employment ties	Referencing
Definition of an edge	Existence of a cooperation or partnership between a TPGO and an organization	Number of co-memberships of a TPGO and an organization across 7 meta-governance institutions (valued)	Number of TPGO employees who have worked, or are working, for an organization (valued)	Existence of a reference of an organization by a TPGO
Number of organizations (including TPGOs)	113	262	379	126
Highest degree (ranking)	1.SAI 2.Utz 3.RSB	1.Rainforest Alliance 2.Utz 3.RTRS	1.BetterCotton 2.Utz 3.FLO	1.ISCC 2.RSPO 3.FLO
Average degree TPGOs	8.6	76.2	27.1	17.2
Density (average cell value in the network matrix)	0.08	0.31	0.07	0.14

FLO, Fairtrade International; ISCC, International Sustainability & Carbon Certification; RPSO, Roundtable on Sustainable Palm Oil; RSB, Roundtable on Sustainable Biomaterials; RTRS, Round Table Responsible Soy; SAI, Social Accountability International; TPGO, transnational private governance organization.

concept of community, based on the observed actual relations between TPGOs as measured in our dataset. This operationalization needs to uncover the degree to which TPGOs “cluster” together within each type of relationship and to which community TPGOs belong.

Social network analysis offers different ways to identify communities, including variations of clique analysis, hierarchical clustering, and connected components (Wasserman & Faust 1994; Brass *et al.* 2004). The different operationalizations vary in terms of how strictly membership of a community is defined. The central idea in all measures is that communities can be conceived as groups of actors that have high connectivity *within* a group and low connectivity *across* groups.

Community detection becomes increasingly complex when multi-relational, valued, and two-mode networks are considered (cf. Alzahrani *et al.* 2014; Wu *et al.* 2015). In the present paper, we build on a recent advancement in community detection algorithms for (valued) two-mode networks: the modularity Q algorithm (Dormann & Strauss 2014).

The modularity Q algorithm produces an overall modularity score for each relationship type, as well as a classification of TPGOs to *modules*, which constitute the operationalization of communities. The algorithm attempts to generate a simulated network such that the TPGOs that are close to each other in this network are more likely to interact. Based on randomly swapping ties between simulation steps, and updating the overall fit at each step, the algorithm divides the network into a number of modules, so that each organization (including TPGOs) belongs to exactly one module. Higher weights of ties in a valued network – that is, the employment and meta-governance membership ties – contribute more to the probability of co-membership in a module. For example, an organization is more likely to be clustered in the same module with a TPGO when they have a stronger employment tie (i.e. more employees who have worked for both organizations), and two TPGOs are more likely to be clustered in the same module when they share a stronger employment tie relationship with this organization.

The resulting modules can be interpreted as tie-rich communities of TPGOs, while the overall modularity Q-value is indicative of community detectability, or the level of clustering in the type of tie to which it refers. More specifically, Q ranges from 0, which means that there are no more ties within communities than can be expected

by chance (based on the marginal row and column totals of the network), to a maximum of 1. The higher the Q-value, the more the data support the division of a network into modules.⁷

8. Results

We conceptualize the multiple types of ties in our data as arenas in which TPGOs engage with other organizations in different ways. As a result, these ties may generate different community structures. Yet these ties, and the community processes we expect they represent, are obviously interdependent (e.g. it is likely that organizations that have a partnership with a TPGO are also referred to by that TPGO when discussing best practices in its policy documents). Hence, it remains an empirical question to what extent community membership of TPGOs in fact overlaps across relationships.

Table 4 describes the results of our Modularity Q examination. In line with **H1**, stating that community structure is tie-specific in terms of detectability and composition of communities, we find variation in community detection across the measured ties. First, the Q value varies considerably across the ties: meta-governance ties show the strongest level of clustering, while referencing produces the shallowest community. Second, the membership of communities detected also varies across the ties. Meta-governance membership leads to a module of Rainforest Alliance, Utz, FLO, Social Accountability international (SAI) and Round Table Responsible Soy (RTRS). Next to this, we also identify a module of 4C, all TPGOs that can be used for bioenergy verification (Roundtable on Sustainable Palm Oil [RSPO], Roundtable on Sustainable Biomaterials [RSB], International Sustainability & Carbon Certification [ISCC], and Bonsucro) plus the two cotton-focused TPGOs (Better Cotton and Cotton Made in Africa [CmiA]). In ties based on cooperation and partnership, we detect a community including organics-focused IFOAM, labor-standard-focused SAI, the commodity roundtables (RSPO, RSB, Bonsucro), Utz, 4C, and Better Cotton. In ties based on referencing and employment ties, we detect large communities including effectively almost all TPGOs, except the flower-focused ones. Both ties, however, show communities detected with a low Q value. Substantively, this throws the importance of community in these types of ties into doubt. The large size of the community in terms of TPGO members is indicative of this lower value: we cannot really detect substantively relevant communities made up of smaller groups of TPGOs (except two flower-focused TPGOs).

We see that for ties based on meta-governance and cooperation and partnership, TPGOs with broadly similar sustainability problem definitions, product foci, or development history are not comprehensively linked in the same communities. Neither do these communities effectively integrate relevant TPGOs in order to address large-scale sustainability problems that exceed organizational boundaries. Employment and referencing ties do integrate most TPGOs. However, the low level of Q at which communities are detected questions the substantive importance of these TPGO connections. Only Utz and SAI belong to a similar module in all four of the relationship types. The majority of TPGOs are excluded from modules on the basis of one or more of the ties analyzed.

Moving to **H2**, we examine whether communities are more detectable for thinner versus thicker types of socio-relational ties, where meta-governance and employment links constitute thinner ties and cooperation/partnership are thicker. Here our results are mixed. We can detect communities for all ties, but in particular, the substantive significance for communities detected based on employment is limited.

In line with **H2**, the strongest, most easily detectable communities, following the Q value, are based on meta-governance membership. Meta-governance membership has the potential to facilitate TPGO coordination and isomorphism as a result of the low membership entry requirements in most meta-governance initiatives. Meta-governance initiatives can facilitate collaboration and coordination among a subset of TPGOs on cross-organizational sustainability and competitive challenges (Fransen 2015); however, such coordinative activities are not required of meta-governance participants.

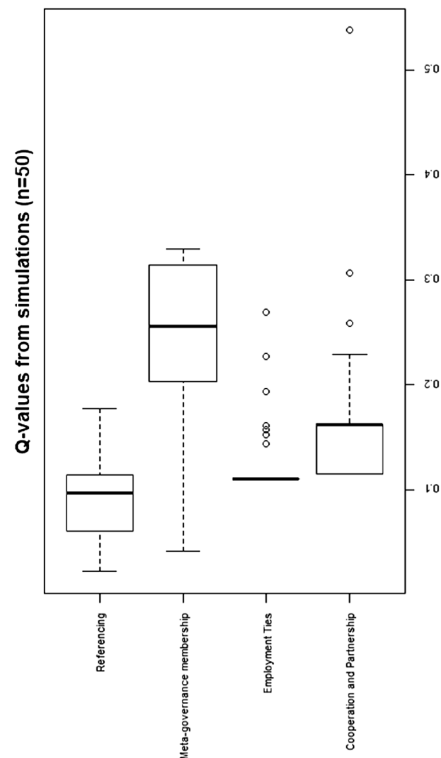
For the thick tie of cooperation and partnership, a community of eight TPGO members is detectable, with a modest Q value. But contrary to our expectations formulated in **H2**, employment ties, as a thinner tie, exhibit lower modularity than cooperation and partnership as a thick tie. Consistent with Fransen *et al.* (2016), low density signifies little interaction among TPGOs. This thinner tie, as an indication of potential coordination, collaboration, and isomorphism, shows little promise of being a potential foundation for community.

The lowest Q value is for the symbolic tie of policy referencing. The reference network is also sparse overall, in line with **H3a**. If we consider that TPGOs could refer to 781 different organizations in constructing a policy

Table 4 Modularity Q-solutions for the four relationship types

Communities	Cooperation and Partnership (Q = 0.161)	Meta-governance membership (Q = 0.259)	Employment ties (Q = 0.110)	Referencing (Q = 0.097)
Module 1	Utz IFOAM 4C RSPO RSB Bonsucro BetterCotton SAI	RSPO RSB 4C Bonsucro ISCC BetterCotton CmiA	Utz FLO IFOAM 4C RSPO RSB BetterCotton CmiA SAI SMBC RainforestAlliance RTRS	Utz FLO IFOAM 4C RSPO Bonsucro ISCC BetterCotton CmiA SAI RainforestAlliance RTRS
Module 2	Utz FLO SAI RainforestAlliance RTRS	Flowerlabel MPSFlorimark		

Only modules including multiple transnational private governance organizations (TPGOs) are shown. CmiA, Cotton Made in Africa; FLO, Fairtrade International; IFOAM, International Federation of Organic Agriculture Movements; ISCC, International Sustainability & Carbon Certification; NGO, non-governmental organization; RPSO, Roundtable on Sustainable Palm Oil; RSB, Roundtable on Sustainable Biomaterials; RTRS, Round Table Responsible Soy; SAI, Social Accountability International; SMBC, Smithsonian Migratory Bird Center.



for sustainable agriculture, it is surprising that half of the TPGOs share no more than six reference organizations with other TPGOs (the median number of shared organizations, see Appendix S1). The matrices undergirding the figures furthermore show that when it comes to contentious issues, such as inclusion of Freedom of Association or living wage references in labor standards or particular definitions of pesticide in environmental standards, many TPGOs end up in different camps.

For robustness purposes, we examine these claims using an alternative cluster-detection method based on the derived one-mode networks of TPGOs from the two-mode networks for the same types of ties. This analysis yields broadly similar results, which we report in the online Appendix S1. We also check for sensitivity of results to coding of meta-governance membership of the six *full* members of the ISEAL Alliance in our sample. These full members, contrary to other meta-governance membership, do have to adjust their policies in order to remain members, which is why they might arguably be coded as contributing to thick not thin ties. In an alternative dataset we therefore explore the implications of coding these members as being in a thick mutual partnership, next to being in a thinner meta-governance member role. This also yields similar results.

Comparison across the ties allows us to examine the hypotheses, but does not allow us to describe the community more substantively. For one, we do not yet know how the different ties build up to an aggregate picture, and the possibly inclusive and exclusive tendencies of communities resulting from multiple ties. Moreover, our assessment so far hides from view other organizational types that may be significant for community formation, such as NGOs, businesses, and governmental institutions.

In a final step therefore, we explore connectedness when we look at the network in the aggregate. If we give all relationships equal weight (i.e. if we dichotomize the *meta-governance* and *employment ties* relationships) we can add up all existing ties across the four types, such that the maximum tie value is four for any relationship between a TPGO and an organization. In that case, the TPGO and the organization have a relationship in all four of the relationship types.

Figure 2 graphs the organizational network for ties that have a weight of two or more, which is the most intuitive depiction of meaningful connectedness. We focus on the large component (a group of organizations “disconnected” from the rest of the graph, cf. Wasserman & Faust 1994), because the other component around SAI primarily includes manufacturing, not agriculture stakeholders. This is no surprise as SAI caters to manufacturing and agriculture, and arguably has become more famous for focusing on the former. SAI’s separation from the other TPGOs thus accords with existing understanding of it as more peripheral to the agriculture TPGO policy-making community. In line with **H2**, thin socio-relational ties most substantively contribute to the formation of these components.

In the largest component, two types of TPGOs figure most prominently. The first type, comprising RSPO, RTRS, RSB, Better Cotton, and Utz, represents TPGOs that share similar development histories (i.e. created by coalitions of multinational brands and retailers with international NGOs) and sustainability problem definitions (i.e. farm-level comprehensive or baseline standards). The second type includes older TPGOs – FLO, Rainforest Alliance, and Utz – that share a broad-food, consumer-product focus. This grouping is prominent because of its age, which signifies both influence in terms of meta-governance positions and references, as well as a longer time to develop (interlocking) employment ties and partnerships. Consistent with our findings above, Utz is the most connected and belongs to both substantive categories of TPGOs.

Figure 2 also shows which non-TPGO organizations figure prominently. Many of these organizations are familiar from previous studies (Bartley & Smith 2010; Bitzer *et al.* 2012; Henriksen & Seabrooke 2015). Solidaridad, WWF, International Union for Conservation of Nature (IUCN), and Unilever are well known for their involvement in many multi-stakeholder TPGOs and therefore also link TPGOs as a result of interlocking boards and meta-governance membership. The ISEAL Alliance is also central, likely because it is the oldest meta-governance initiative. The age and history of the Forest Stewardship Council (FSC) – a TPGO in the forest sector – are the probable reasons for its central position. The FSC has also been an important conversation partner to agriculture TPGOs that want to work on problems at the crossroads of deforestation and sustainable agricultural land use.

Turning to business and government, it is notable that, next to Unilever, Nutreco, and Eco Magro Industrial, very few industry players are included. Governmental institutions are also at the margins. If we add up employment ties, policy cross-references, partnerships, and participation in meta-governance as constituting a community, non-profits predominate.

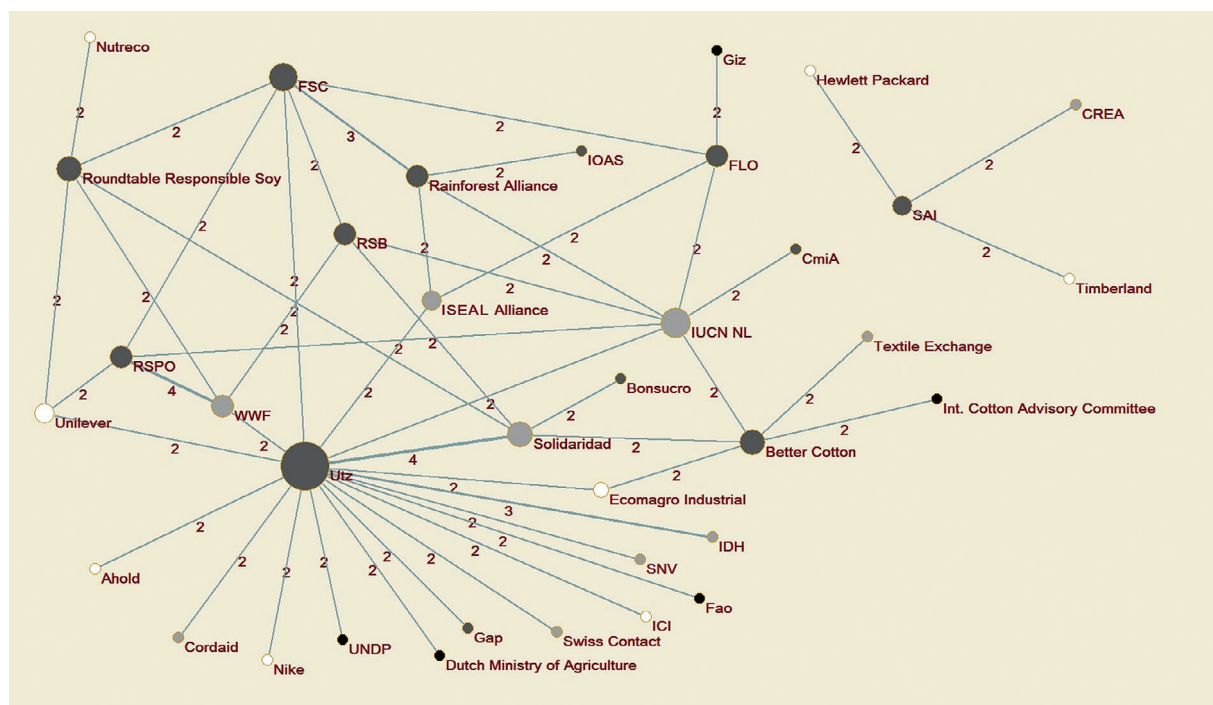


Figure 2 Visualization of the aggregate two-mode network of transnational private governance organizations (TPGOs) and partner organizations in sustainable agriculture. Tie weights represent the number of relationship types (max 4) for which a relationship exists (for employment and meta-governance ties, this is at value 1 or higher). For clarity, only tie weights at > 1 are shown. Node color represents the type of organization (white = Business; light grey = Non-profit; dark grey = TPGO; black = Government and Political). Node size represents degree centrality.

Examining the strongest relations – with a weight of three or four – elucidates the continued importance of TPGO founders, specifically the ties between WWF and the RSPO, and Solidaridad and Utz. Next to these relationships, the tie between Utz and IDH is strong, likely because IDH’s work as a meta-governor focuses on many of the products Utz certifies and because both organizations are based in the Netherlands, making it easy to cooperate, hire from the same labor market, and choose similar board members.

But the main component is especially relevant because of who it excludes. Figure 2 suggests that coordination and collaboration on and diffusion of sustainable agriculture practices is shaped primarily by older TPGOs and newer multi-stakeholder TPGOs that were launched by multinationals and international sustainable development NGOs and that advance farm-level baseline or comprehensive standards. This excludes the organics movement, which advances a more particular understanding of sustainability and gives greater prominence to smallholder farms. It also excludes the TPGOs that are purely driven by industry players (such as ISCC) and that compete with the Solidaridad/WWF/Unilever-initiated Roundtables. Finally, flower-focused and smaller TPGOs with narrower problem definitions (e.g. SAI only focused on labor and the Smithsonian Migratory Bird Centre focused mostly on biodiversity) are also excluded.

9. Discussion

The networks we explore for the four ties among TPGOs overall are sparse and varied, particularly if we focus on direct ties among TPGOs. These findings support our **Hypothesis 1** that community structure is indeed tie-specific. Sociologically, we already expected that different ties mean different things to TPGOs, and this is mirrored in the variation we find in the detectability and composition of communities in our comparison of the ties. **Hypothesis 2** is also largely confirmed, meaning that most of the observations support our intuition that communities would be more detectable for thinner socio-relational ties among TPGOs. The exceptions here are employment ties, as a thinner tie that showed less detectable communities than the thicker tie of partnership and cooperation. **Hypothesis 3a** is supported by our findings on symbolic ties, which are sparser than socio-relational

thin ties. For our aggregate depiction of ties, we moreover find that the communities we identify predominantly rely on thin ties.

These findings imply that actual coordinative, collaborative, and isomorphic behaviors are currently modest, and interactions among TPGOs only indicate the *potential* for more coordination, collaboration, and isomorphism. Although our data are more recent, they uncover similar patterns to older studies on TPGO community structure (e.g. Bartley & Smith 2010) and go against propositions of a thicker type of TPGO community emerging that could possibly produce policy convergence and coordination among TPGOs (cf. Bernstein & Cashore 2007). This casts some doubt on the relative importance of sociological/ideational forces emerging from a community of TPGOs as a dominant explanation of TPGO behavior at present.

Substantively, our findings also reveal inclusion and exclusion in communities across ties. This means that if we hypothesize future coordination and collaboration or isomorphism on the bases of these ties, it would be more likely to be converging toward an agri-business-friendly perspective on sustainability. Most “insider” TPGOs – with the notable exception of Fairtrade – share a commitment to a mainstream catch-all definition of sustainability that is compatible with large scale farming and multinational multiproduct agribusiness policies of corporate social responsibility. Noticeably, by contrast, the organics movement and TPGOs focused on biodiversity and labor are absent from the aggregate community. These potential exclusionary effects elucidate a darker side of community, where those with power may be able to secure privileged positions within a community and influence community structure to serve particular ends to the detriment of others.

Our results may to some extent be driven by the selection of TPGOs and the operationalization ties. First, we focused on a distinct set of TPGOs, which may themselves be part of larger cross-sector TPGO-communities. Second, other thick and thin ties may merit study to further unearth community structure. As noted, we selected ties based on substantive meaning and reliable and complete available information. Alternative types of interaction may, for example, include the use of intermediary service organizations and information exchange through diverse (social) media and fora. And third, the coding strategy we used for the different types of ties is likely sensitive, for example, the approach we took for references (see section 5). In future research, interviews can further probe the propositions we have made about the current nature of interactions among TPGO policymakers and the substantive political implications of the communities we identify for the evolution of private agricultural governance and its predominant perspective on sustainability. Nonetheless, we hold that the present analysis makes a substantial contribution for our theoretical purposes. Moreover, given that our analysis includes four different ties, it becomes less likely that the addition of other ties would dramatically change the overall picture as reported in Figure 2.

Our analysis did not propose a hierarchy within the categories of “thin” and “thick” ties, in terms of the meaningfulness of connections among TPGOs. Moreover, following Djelic and Quack, we are agnostic about the degree to which TPGO ties are emerging through agentic or structural forces, irrespective of whether these ties are thick, thin, relational, or symbolic. However, following new institutional theory, we could alternatively consider collective action and isomorphism as two ends of a spectrum, where isomorphism connotes behavioral changes on the part of a TPGO that are more affected by structural factors that steer rational decisions, in light of uncertainty, toward particular strategies and organizational forms (DiMaggio & Powell 1983). Collective action, by contrast, could capture TPGO behavioral changes where structural factors lack the same steering power but are rather conceptualized as resources that facilitate or constrain agents, allowing TPGOs to either collaborate or coordinate. Following this interpretation, isomorphism would likely surface at a later stage in community development than collaboration and coordination, and would be the result of structural forces rather than agentic decisions. Because our results currently show both few ties on the basis of collaboration *and* few ties on the basis of shared references, we do not explore this interpretation further here. Nonetheless, this interpretation could inspire future work about the consequences of TPGO community structures.

10. Conclusions

TPGOs represent an organized effort to set standards for social and environmental practices of economic activities in various issue areas. Growing attention is paid to interactions among TPGOs (Eberlein *et al.* 2014), with some studies suggesting that community (Bernstein & Cashore 2007; Bartley & Smith 2010), field (Dingwerth &

Pattberg 2009), or population (Abbott *et al.* 2016) level processes – all related conceptualizations – are likely to matter as independent variables explaining TPGO behavior.

We contributed to this burgeoning area of study by developing the most comprehensive assessment of agricultural TPGOs examined to date. Our main ambitions were descriptive and analytical. We first wanted to describe the structure of TPGO communities within the agricultural sector. Our hunch was that measuring the different ways in which TPGOs were connected would reveal a diversity of community structures. We then wanted to probe expectations about the kind of communities we were likely to detect based on ideas of thin and thick communities and symbolic and relational dimensions of communities drawn from Djelic and Quack (2010). These differences, we expected, would matter for the kinds of TPGO behavioral effects we observe, of which we focused on coordination, collaboration, and isomorphism.

Our multi-relational approach shows that TPGO community structures are generally sparse. Moreover, as we expected, community structures are highly sensitive to the type of tie one assesses. Membership of meta-governance leads to a more densely connected TPGO community, while measures of shared references, employment, and partnerships among TPGOs generate less dense communities. Generally, ties that exhibit the *potential for*, not *actual*, collaboration, coordination, and isomorphism among TPGOs lead to denser TPGO communities. This is also apparent in our aggregate measure of ties, which reveals an overall community, predominantly based on thin ties, dominated by TPGOs that have been created by WWF, Solidaridad and/or Unilever, next to FLO and Rainforest Alliance, the “grand old ladies” of the TPGO community.

Our study has four implications. First, we hypothesize that thin communities may well be an enduring feature of TPGO interactions. Our analysis suggests this because the agriculture-focused TPGOs studied are some of the oldest that exist, which means interactions have been ongoing in the sector for longer than many other issue areas. Indeed, as Reinecke *et al.* (2012) have theorized, TPGOs are driven to interact by contradictory desires: their policymakers seek to engage to make TPGOs stronger as a group, while they also defend their own particular ideological perspectives on sustainability and their market niches. These contradictory objectives, in other words, may limit the formation of thick ties, and therefore also limit the ability of TPGOs to fully address coordination challenges and transorganizational sustainability challenges. Indeed, studies agree that the rise of TPGOs has been idiosyncratic, piecemeal, and highly patterned (Auld 2014c), which has left some problems unattended, or at least underattended. The limited evidence of thicker communities thus has normative implications for scholars who have been interested in processes such as orchestration (Abbott & Snidal 2009) or interplay management (Oberthür & Stokke 2011) that aim to ensure that TPGOs work in concert more effectively. Pessimistically, our analysis casts doubt on how easily TPGOs can be steered toward coordination or collaboration; optimistically, it suggests this may be an area of untapped potential.

A second implication concerns the question of the underlying drivers of TPGO behavior. Are they a product of rational calculations, political tensions, sociological-ideational forces, or a combination of all three? The presence of thicker communities where actual collaborative efforts are identified, or many symbolic ties indicative of isomorphic effects would provide evidence for the importance of sociological-ideational forces. However, the absence of thicker communities and the paucity of symbolic ties are more indeterminate. This situation suggests that rational calculations may matter, that there has been insufficient time for a thicker community to develop, or that other communities, such as those that were the source of particular TPGOs, remain more important as structuring forces for the behavior of individual TPGOs. Our study cannot resolve these questions, but we see this as an important and fruitful area for further research.

Third, our study points to the potential exclusionary forces at play in the formation of communities. For the reasons we have just discussed, the structuring force of TPGO communities is not (yet) strong. Nevertheless, certain ideas about how sustainable agriculture should be advanced are less prominent in some of the communities we identified. If isomorphism were to become a stronger force in the future, this might further preclude these ideas, which could mean that some problems in the agricultural sector go unaddressed. In this respect, thicker communities can have unintended negative effects, which may outweigh their potential benefits for coordination and collaboration among TPGOs confronting common problems.

Finally, our findings offer broader lessons for research beyond the agriculture sector. We develop an empirical analysis based on multiple ties, analyzed separately and in combination; our approach may be fruitfully used for other issues, industries, and types of governance to create a nuanced picture of interactions and community

structures. Our theoretical discussion of the different ties among TPGOs and their implications for community structure signals how communities are built out of a variety of ties, and how different degrees of community formation may be at play, with different effects on policy and policy outcomes. This approach to studying interactions may therefore contribute to our understanding of how global sustainability governance evolves, and the degree to which ties and communities shape and possibly change the evolutionary trajectory of policymakers.

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Notes

- 1 Bernstein and Cashore (2007, pp. 354–55) adopt March and Olsen's (1998) work, emphasizing how the interactions among TPGO policymakers within a given sector may change in character, from being driven by a logic of consequences (ultimately cost–benefit and utilitarian in nature) to a logic of appropriateness (as embedded in a structure or rules and conceptions of identities). They conceptualize such structures and identities as evolving in a *community* of TPGOs with a shared political perspective (2007, p. 356). Community structures are thus key determinants of mutual adjustment among TPGOs.
- 2 We are grateful to one of the blind peer reviewers for offering arguments for this case.
- 3 Fransen *et al.* (2016) excluded Fair Flowers Fair Plants, Fair Labor Practices and Community Benefits, World Fair Trade Organization, Fair For Life, and Veriflora because of irretrievable information and questions of relevance. Fransen *et al.* (2016) included (Global)GAP in their analysis, which we exclude because of its unique policy approach that could undermine the validity of comparing cross-references with TPGOs with other approaches. Still, GlobalGAP does emerge in the cross-reference analyses and other tie analyses if other TPGOs have ties with this organization.
- 4 As a result of missing information, we cannot code six percent of the identified organizations in one of these categories.
- 5 Bartley and Smith's (2010) analysis of ties in 2006 reports 412 organizations of which 11 are TPGOs. In their study of employment ties in sustainable agriculture TPGOs, Fransen *et al.* (2016) report 484 organizations.
- 6 That is, $262 - 16 = 246$.
- 7 For a more technical discussion of the algorithm, we refer to Dormann and Strauss (2014), and the package “bipartite” in R.

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Supporting information

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Appendix S1: Robustness analysis: Alternative cluster-detection and coding sensitivity.