

**Private and civil society governors of mercury pollution from artisanal and small-scale gold  
mining: A network analytic approach**

**ABSTRACT:**

Artisanal and small-scale gold mining (ASGM) is both a subsistence livelihood for millions of people and the leading source of mercury pollution globally. The United Nation's 2013 Minamata Convention on Mercury aims to address this challenge, but such public regulatory initiatives often struggle with effectiveness. Therefore, this article explores what private and civil society actors can do to support or complement the Minamata Convention and reform ASGM more generally. Accordingly, it asks three questions: which private and civil society actors are advocating for improved governance of mercury and gold, what methods are they using, and what further research is needed to understand their current and potential governance contributions? To answer these questions, the article uses a transnational advocacy network framework to analyze original data compiled via hyperlink analysis, reviews of regulatory texts, and attendance at the Minamata Convention negotiations. The article finds significant differences between the types of actors comprising each advocacy network, and provides case studies of the leading private and civil actors that lobby, partner with, and bypass public actors to achieve their advocacy goals. Acknowledging the difficulty of governing global supply chains, the paper concludes with four areas of future research needed to help governors achieve their potential.

**KEYWORDS:**

Artisanal and small-scale mining (ASM); Private governance; Gold; Mercury; Networks

**HIGHLIGHTS:**

- The Minamata Convention is a significant political achievement, but may struggle to achieve significant reductions in mercury pollution from artisanal and small-scale gold mining.
- The transnational advocacy network for mercury governance is made up primarily of public actors (~60%), whereas the majority of advocates in gold and ASGM networks are private and civil society actors (74% for Gold, 70% for ASGM).
- The private and civil society actors with both high levels of network prestige and high levels of attendance at the Minamata Convention negotiating sessions are: the Artisanal Gold Council, the Alliance for Responsible Mining (in partnership with Fairtrade International), Human Rights Watch, the International Council on Metals and Minerals, and the International Persistent Organic Pollutants Elimination Network.
- The only private and civil society actors using the method of bypassing public actors to reduce mercury pollution from ASGM are the certification organizations Fairtrade International and the Alliance for Responsible Mining. For miners willing and able to adopt mercury-free mining methods, the Alliance for Responsible Mining will pay them more if the price of gold is below \$1,134/oz., and Fairtrade International will pay them more if the price of gold is above \$1,134/oz.

- Public, private and civil society actors all have important roles to play to ensure that minerals remain a benefit (and not a curse) to communities worldwide. The more knowledge society accumulates on these actors' contributions, mistakes, and potential, the better for current and future generations.

## 1. Introduction

Jewelry is one of humanity's most beloved but problematic areas of consumption. While the exchange of precious metals is central to many cultural rituals, their production often wreaks havoc on social and environmental systems (Ali 2009, Bloomfield 2014, Hilson 2014). This situation is exacerbated in the realm of gold mining, in which 48% of mined ore serves the jewelry industry (World Gold Council 2014). It is worst at the level of artisanal and small-scale gold mining (ASGM), in which men, women and children mine, often informally or illegally, to earn subsistence livelihoods (Hilson and McQuilken 2014; Spiegel and Veiga 2010). Because these miners often use a production process known as mercury amalgamation, ASGM is now the leading source of mercury pollution globally (UNEP 2013). Miners use mercury amalgamation because it is often the cheapest and easiest way to mine gold, there are few alternative livelihoods available, and they are seldom aware of mercury's dangers or how to mitigate them (Seigel and Veiga 2010; Sippl and Selin 2012; Veiga et al. 2014). Mercury harms the health miners and their communities who inadvertently inhale the vapor during amalgamation, and harms the health of seafood consumers globally as mercury travels long atmospheric distances, deposits in waterways, and bio-accumulates in aquatic food chains (Selin, N. 2014; UNEP 2013).

The international community recognizes the transnational causes and consequences of mercury pollution and adopted the United Nations Minamata Convention on Mercury in October 2013. Today, roughly a year after adoption, the treaty enjoys signatures from 128 countries and ratification by 9. Article 7 and Annex C of the treaty address the problem of mercury emissions from ASGM directly, while its articles on trade, finance, capacity building and technology transfer address the sector indirectly. Parties with ASGM within their borders must "take steps to reduce, and where feasible eliminate, the use of mercury...and the emissions and releases to the environment of mercury from such mining and processing" (Minamata Convention 2014). Further, parties with "more than insignificant" amounts of ASGM within their borders must draft National Action Plans (NAPs), which detail the steps they'll take to reform the sector and mitigate its harm (Minamata Convention 2014).

Unfortunately, such global public policies tend to struggle with effectiveness. Sometimes this is due to weak or vague treaty language, which is often required to gain consensus among states with varying interests. Other times it is due to the "implementation gap," a phenomenon in which parties to the treaty lack either the will or capacity to comply with its stipulations (Selin 2012; Templeton and Kohler 2014). While the Minamata Convention is clearly a significant political achievement (Selin 2014), it may fall prey to the implementation gap since ASGM mainly occurs in developing countries with weak state capacity and interests in opposition to ASGM reform. Many parties to the treaty have ASGM regulations in place but lack the will or ability to enforce them (Siegel and Veiga 2009). Therefore it is not clear that the Minamata Convention's stipulation to create National Action Plans composed of more laws and protocols will change conditions on the ground, since states are not implementing the rules already in place.

This capacity gap could be closed with treaty-affiliated assistance in the form of money, training, or technology transfers, but all such funding mechanisms in the Minamata Convention are voluntary, making the adequacy of such flows uncertain (UNEP 2014). Further, even if funding for ASGM reform materializes, the treaty does little to address deficiencies of will. Mineral-rich developing countries have incentives to cater to large-scale mining firms that currently pay governments larger amounts of taxes and royalties than small-scale operations do. Since large and small-scale miners often compete for the same plots of gold-laden land, large scale firms lobby governments to out-law small scale mining or only allow it on subpar land. This is the opposite approach that is called for in the treaty, which recognizes ASGM as a subsistence livelihood that will only shift to the black-market if suppressed.

This situation—in which the burden of reducing mercury from ASGM falls on the actors least willing and able to manage it—raises the question of what private and civil society actors can do to support or complement the Minamata Convention and reform ASGM more generally. Accordingly, this article asks three questions. First, which private and civil society actors are advocating for improved governance of mercury and gold? Second, what methods are they using to reform ASGM? Third, what further research is needed to understand their current and potential contributions to the governance of global supply chains?

To answer these questions, the article uses a transnational advocacy network (TAN) framework to analyze original data compiled via observations and interviews at the fourth International Negotiating Conference of the Minamata Convention (INC4), hyperlink analysis of advocacy websites, and review of regulatory texts. TANs are groups of public, private, civil society and hybrid actors working independently from states to achieve shared public goals (Keck and Sikkink 1998). TAN research focuses on the socio-political connections between advocates and the processes through which they construct and disseminate policy ideas in order to shape global governors' preferences and behavior (Bob 2005, 2009; Carpenter 2014; Finnemore 2014; Schmidt 2008).

The article proceeds in three parts. Part 1 presents the actors comprising the TANs promoting increased gold and mercury governance. It finds significant differences in the composition of these TANs regarding the balance of public, private and civil society actors, as well as similarities between them in the form of the same actors appearing in multiple TANs. Part 2 presents three methods being used by private and civil society actors to reduce mercury pollution from ASGM—lobbying public actors, partnering with public actors, and bypassing public actors—and provides case studies of each. Part 3 assesses the functionality of the current system, and identifies promising avenues for future research. Overall, the article argues that both private and civil society actors are currently making critical contributions to a portfolio approach to jewelry industry governance, but that more research is needed to evaluate and facilitate their long-term contributions.

## **2. Global Governance and Transnational Advocacy Networks**

Political science has historically taken the state as its unit of analysis, but over the course of several decades, a steady shift in focus from *governments* to *governance* has taken place (Finnemore 2014, Rosenau 1995). Research on governance considers a plurality of actors (state and non-state), sources of authority (public, private and civil society) and forms of organization (hierarchical, horizontal, networked) as equally important to explaining modern arrays of political phenomena (Dingwerth and Pattberg 2006; Weiss 2000). Non-state actors (e.g. public bureaucracies, intergovernmental organizations (IGOs), nongovernmental organizations (NGOs),

firms) are increasingly drawing attention from governance scholars aiming to balance the analytic focus after decades of attention to the state, and non-state actors deriving authority from private and civil society sources are the focus of many recent studies (Auld and Gulbrandsen 2013; Avant et al. 2010; Buthe and Mattli 2011; Green 2013; Hall and Biersteker 2002).

The role of civil society actors in creating and effecting global policy is well documented (Auld 2014; Carpenter 2014; Florini 2000; Keck and Sikkink 1998; Price 2003; Tarrow 2005), and the contribution of private actors to the global good is the subject of a growing literature on corporate social responsibility (Crane 2008; Dashwood 2012; Moon et al. 2010; Porter and Kramer 2011; Vogel 2006). When these actors select specific industries, products, issues, or actors to target by means of public awareness raising, 'naming and shaming,' or regulatory campaigns, they are engaging in "transnational advocacy," a powerful form of global governance (Bloomfield 2014b; Sabatier and Jenkins-Smith 1993, Hafner-Burton 2008, Avant et al 2010, Prakash and Gugerty 2010; Ron et al. 2005). When these actors intentionally create relationships to increase their moral, material, or intellectual leverage against targets, they are creating transnational advocacy networks (TANs).

Since Keck and Sikkink's (1998) foundational study defining TANs as "groups of actors working internationally on an issue who are bound together by shared values, a common discourse, and dense exchanges of information and services" (p. 89), scholars have worked to deconstruct the concept to gain a more nuanced understanding of network composition and the power dynamics and ideational cleavages that often exist within TANs (Bob 2005, 2009, 2012; Carpenter 2007, 2011, 2014; Hafner-Burton et al. 2009; Kahler 2009; Ward et al. 2011; Wong 2008). In revising criteria for network membership, scholars are questioning the strength and nature of relationships between actors and the degree of shared values that ought to be required. How small and isolationist can an actor be while still being considered a network member? If two organizations advocate for increased governance of ASGM, but differ in their preference for public versus private policy approaches, should they be considered members of the same network and coded as having shared values? In revising assumptions about the non-hierarchical nature of TANs, scholars are questioning what should constitute network leadership. Do power hierarchies exist, and if so, are leaders defined by financial, social, or other measures of power?

Research on these questions typically begins by studying the "links between nodes," where "nodes" are actors such as individuals, states, or organizations, and "links" are the forms of connection between them, such as friendships, citations, or trade agreements. Links act as channels through which material and non-material resources such as money or norms flow, and therefore constitute meaningful structures that define, enable, and constrain node behavior (Hafner-Burton et al 2009, Ward et al 2011, Carpenter 2014). The direction and reciprocity of links coupled with the identity of the nodes can reveal meaningful patterns yielding important insights about network composition and behavior.

A variety of types of data can be used as evidence of links (e.g. mentions in interviews, attendance at meetings, alumni status, email lists, etc.), but Price (2003) argues that the TAN literature has not adequately drawn evidence from the internet, which he calls an important "organizational medium for advocacy networks." Many scholars are now following this advice by studying the hyperlinking behavior of actors in order to determine network membership and, potentially, the power dynamics within and between networks (Park 2003; Rogers 2006; Thelwall 2006; Carpenter 2014). These scholars argue that hyperlinks connecting advocacy organization websites are strategic, revealing the ideas network members hold about each other.

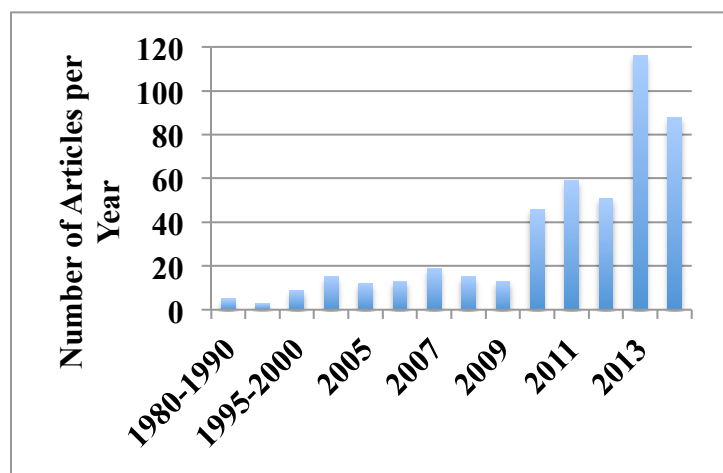
Much like academic citations, they constitute membership in an online community and indicate an actor’s socio-political place in that community.

### 3. Methodology: Identifying Networks and Measuring Actor Influence

Following these scholars and particularly the techniques of Rogers (2006) and Carpenter (2014), this paper uses Issue Crawler software and hyperlink analysis to determine the composition of three TANs relevant to the problem of mercury emissions from ASGM. In identifying these TANs, the paper argues that advocates might conceptualize the problem as being about a product (gold), an issue (mercury pollution), or a livelihood (subsistence mining). If the problem is conceptualized as one of ‘ethical consumption’ in the context of globalized supply chains, a TAN might form to improve the governance of gold. If the problem is conceptualized as a public health issue, a TAN might be composed of actors with experience governing hazardous chemicals and mercury specifically. Or, given the rise in public awareness of ASGM as a subsistence livelihood in recent years (see Table 1), the problem may be conceptualized as one of poverty and the need for subsistence livelihoods. In this case, ASGM might have an advocacy network all of its own. These are not the only ways the problem could be conceptualized—many networks likely have actors advocating ASGM reform, such as forestry networks, child labor networks, wildlife networks, etc. But for this preliminary study, the gold, mercury and ASGM networks are good places to start.

[Insert Table 1: Newspaper Coverage of ASGM, 1980-2014]

**Table 1: Newspaper Coverage of ASGM, 1980-2014**



Source: Data Collected from LexisNexis in October 2014

To populate these networks, the paper studies the hyperlinking behavior between websites. Websites are data is particularly important in the realm of jewelry industry governance since over two-thirds of luxury shoppers say they engage in online research prior to an in-store purchase, and one- to two-thirds say they frequently turn to social media for information and advice (Dauriz et al 2014). Knowing this, the content of these websites is likely to be strategic. Websites of gold retailers uniformly devote sections to “ethical” sourcing and link to a variety of actors for a variety of reasons (e.g. as sources of further information, as validation of their ethical credentials, and to shame competitors). Certification organization websites, advocacy

organization websites, donor websites, and intergovernmental organization websites likewise link to actors selectively, and are therefore important sources of data on TAN membership.

The paper uses website's hyperlinks to conduct 'co-link analysis,' a method of network detection that involves two steps. First, the researcher inputs several "seed" URLs of actors known to be strong advocates of certain issues, problems or policies. Examples include the Artisanal Gold Council's website for the ASGM TAN, UNEP's mercury tab on their Chemicals and Waste website for the Mercury TAN, and the No Dirty Gold website for the Gold TAN. Second, the software scans (or "crawls") several pages of these seed websites for 'out-links,' i.e. hyperlinks from a seed website to a receiving website. Any website that receives at least two out-links from the seeds is included in the network.

Once network membership is determined, the quantity and direction of links between actors can be used to study intra-network dynamics. Many scholars are interested in revising Keck and Sikkink's conception of networks as non-hierarchical by using hyperlinks to study "actor centrality," where centrality is used as a proxy for power within a network (Ward et al. 2011). The number of incoming hyperlinks ('in-links') an actor receives is one centrality measure argued to proxy for an actor's prestige within the network. Prestige is of interest to network scholars as it may indicate the degree to which actors can exert their world views and preferences on the rest of the network, which in turn impacts global governance methods and outcomes. Prestige in a network can further be concentrated or diffuse, with varying impacts on network behavior associated with theories on veto players and collective action problems. Another measure of centrality is "betweenness," which is the degree to which a node facilitates the flow of information and other resources through the network. Carpenter (2014) uses a combination of both of these measures to identify the network "gatekeeper," a term created by Bob (2005) to denote the actor wielding sufficient power within the network to set the network's advocacy agenda (i.e. which issues and targets to pursue and how).

Carpenter wisely notes, however, that such measures are necessary but preliminary indicators of power, and encourages scholars to complement these with other measures of material, social and ideational resources. Accordingly, this article uses co-links to build the networks and prestige levels to order them, but also draws from original data on actor attendance and behavior at the Minamata Convention negotiating sessions. The author interviewed and observed actors during the fourth international negotiating conference (INC4) in Punta del Este, Uruguay, June 27- July 2, 2012, and tracked attendance through documents available from the United Nations Environment Program (UNEP). This data informs the case studies presented in Section 5 and the recommended paths for future research in Section 6.

## **4. Composition of Transnational Advocacy Networks Governing Gold and Mercury**

### *4.1 Predominant Actor Types in the TANs*

The results of the hyperlink analysis reveal the full spectrum of actors advocating for improved governance of mercury and gold. Important differences in network composition are immediately apparent. Critically, the proportions of actors deriving authority from public, private and civil society sources vary significantly across networks, despite the sizes of networks (i.e. the quantity of members) being relatively the same. The Mercury TAN is made up primarily of public actors (~60%), whereas the vast majority of advocates in the Gold and ASGM TANs are private and civil society actors (74% for Gold, 70% for ASGM). Relatedly, while government bureaucracies such as environment ministries or international aid agencies are the most

represented actor type in the Mercury TAN (higher even than IGOs like UNEP, which hosted the Minamata Convention negotiation process), they are nearly absent from Gold and ASGM TANs, despite gold mining being central to many national economies.

Instead, when the problem of mercury emissions from gold mining is conceptualized as an industrial issue, firms, trade associations (TRA), and NGOs dominate the governance landscape. Representation of business interests is nearly missing from the Mercury TAN (2%) and most prevalent in the Gold TAN (43% of all actors are either firms or trade associations). These representatives span the gold supply chain from jewelry retailers to metal refiners to multinational mining corporations. When the focus is narrowed to advocates working to enhance governance of small-scale production only, as was done in the construction of the ASGM TAN, the number of business actors drops (~40% to 30%) and the number of NGOs increases (~30% to 40%). The drop in businesses is due to the exit of many multinational mining corporations from the ASGM TAN, but this drop should not be seen as automatic or intuitive, as these firms have an interest in improved ASGM governance and could theoretically be strong advocates for its reform (see Section 5). Finally, the media is more active in the Mercury TAN than in the others, and NGOs are more active in the ASGM TAN, i.e. when the problem is conceptualized as being about a subsistence livelihood.

[Insert Table 2: TAN Composition by Actor Type]

**Table 2: TAN Composition by Actor Types**

TAN Actor Type:	TAN Focus		
	Mercury	Gold	ASGM
Government Agency	33%	2%	6%
IGO	25%	14%	24%
NGO	28%	29%	39%
Business (Firms + Trade Associations)	2%	43%	29%
Media	12%	2%	1%
<b>Total Public Actor Percent:</b>	<b>58%</b>	<b>16%</b>	<b>30%</b>
<b>Total Private &amp; Civil Society Percent:</b>	<b>42%</b>	<b>74%</b>	<b>70%</b>
<b>Total Number of Actors in TAN:</b>	<b>60</b>	<b>80</b>	<b>67</b>

Source: Co-link analysis via IssueCrawler software

#### *4.2 Private and Civil Society Membership in TANs*

With the predominant actor types identified, the analysis now zooms in a level to the identify the individual actors comprising the TANs with special attention to private and civil society network members. As discussed previously, network members are listed by the number of in-links they received from other network members, which is a preliminary measure of their ‘prestige’ within the network and a proxy for power. The patterns of actor-type representation revealed in the previous section are reflected in the top-five most prestigious network actors: the Mercury TAN is dominated by public actors, the Gold TAN is dominated by private and civil society actors, and the ASGM TAN is more mixed (see Table 3). However, the data clearly shows that preponderance in a network is not the same as prestige. Neither government bureaucracies nor firms show up at the top of network in-link lists, despite these network segments comprising significant portions of network membership.

Instead, the Mercury TAN is dominated by IGOs, specifically UNEP and other members of the UN system that creates multilateral treaties for governing hazardous chemicals. UNEP also receives the most in-links in the ASGM TAN, although its relative prestige is less pronounced than in the Mercury TAN. Other prestigious ASGM actors include the World Bank (an IGO), the NGOs Fairtrade International (FLO) and the Alliance for Responsible Mining (ARM), and the trade association the World Gold Council (WGC). These latter three are also in the Gold TAN's top-five, which additionally includes the NGO Oxfam International and the IGO Organization for Economic Cooperation and Development (OECD).

**Table 3: Top Five Most Prestigious Actors in TANs**

Mercury TAN			Gold TAN			ASGM TAN		
<i>Actor Name</i>	<i>Actor Type</i>	<i>In-Links</i>	<i>Actor Name</i>	<i>Actor Type</i>	<i>In-Links</i>	<i>Actor Name</i>	<i>Actor Type</i>	<i>In-Links</i>
UNEP	IGO	36	WGC	TRA	21	UNEP	IGO	18
UN	IGO	17	FLO	NGO	19	FLO	NGO	14
Stockholm Convention	IGO	12	Oxfam	NGO	12	ARM	NGO	13
Basel Convention	IGO	10	ARM	NGO	11	World Bank	IGO	12
Healthcare Without Harm	NGO	10	OECD	IGO	11	WGC	TRA	12

Source: Co-link analysis via IssueCrawler software

[Insert Table 3]

This paper's main interest is in the current and potential role of private and civil society actors in reducing mercury from ASGM. Actors of these types possessing average or above average levels of prestige are listed in Table 4. Most networks are dominated by NGOs, but in the Gold TAN, prestigious advocates are nearly as likely to be businesses (30%) or trade associations (20%). It's important to note that very few of these target both mercury pollution and ASGM directly. Some, like Healthcare Without Harm, have nothing to do with mercury 'pollution' let alone mining. Instead, this group advocates ending the use of mercury in health care products, such as thermometers, dental amalgams and vaccines (HWH 2014). Other advocates focus on mercury pollution and its effects from a regional standpoint (e.g. National Wildlife Federation in the United States and GroundWorks in South Africa), while still others



[Insert Table 4]

**Table 4: Most Prestigious Private and Civil Society Actors (Listed by Name, Type, and In-Link Quantity)**

Mercury TAN			ASGM TAN		
Healthcare Without Harm	NGO	10	Fairtrade International	NGO	14
International POPs Elimination Network	NGO	7	Alliance for Responsible Mining	NGO	13
Toxics Link	NGO	5	World Gold Council	TRA	12
Ground Work	NGO	4	Responsible Jewelry Council	NGO	10
National Atmospheric Deposition Program	NGO	4	Artisanal Gold Council	NGO	13
National Wildlife Federation	NGO	4	Fair Jewelry Action	NGO	7
Traffic	NGO	4	Extractive Industry Transparency Initiative	NGO	7
Earth 911	NGO	3	Int'l Council on Mining & Metals	TRA	7
Economic & Social Development Organization	NGO	3	Oro Verde	NGO	6
Nature	NGO	3	Solidaridad	NGO	6
Economics of Ecosystems & Biodiversity	NGO	3	Cred Jewelry	BUS	5
Euro Chlor	TRA	3	Voluntary Principles	NGO	5
Gold TAN					
World Gold Council	TRA	21	iSeal Alliance	NGO	5
Fairtrade International	NGO	19	Voluntary Principles	NGO	5
Oxfam International	NGO	12	New York Mercantile Exchange	X	5
Alliance for Responsible Mining	NGO	11	Cred Jewelry	BUS	4
Solidaridad	NGO	10	Jewelry London	BUS	4
Barrick Gold Corporation	BUS	7	Newmont Gold	BUS	4
Int'l Council on Metals and Mining	TRA	7	Produit Artistiques Metaux Precieux	BUS	4
GFMS Surveys and Forecasts (Reuters)	BUS	6	Cyanide Code	NGO	4
Global Reporting Initiative	NGO	6	Extractive Industries Transparency Initiative	NGO	4
Metalor	BUS	5	Human Rights Watch	NGO	4
Rand Refinery	BUS	5	Resolv	NGO	4
Conflict Free Smelter	NGO	5	Gold Fixing	TRA	4
Global Witness	NGO	5	IndustriAll	TRA	4
Oro Verde	NGO	5	London Bullion Market Association	TRA	4

Source: Co-link analysis via IssueCrawler software

focus on the gold industry, but work to reform its links to conflict rather than its impact on the environment (e.g. the World Gold Council) (WGC 2014). The next section will provide analysis of the three methods used by the subset the private and civil society actors in Table 4 that are minimally but specifically working to reduce mercury emissions from ASGM.

## 5. Private and Civil Society Methods for Governing Mercury and Gold

As private and civil society actors proliferate and public actors struggle to provide collective goods, the formers' ability to support and complement the latter's governance efforts warrants investigation. Private and civil society actors working either primarily or tangentially on reducing mercury emissions from ASGM are using three main methods in reference to public regulatory actors and initiatives: lobbying public actors, partnering with public actors, and bypassing public actors.

### 5.1 Lobbying Public Actors

The first method of transnational advocacy used by private and civil society actors is the one that's received most scholarly attention to date: lobbying global public regulators. Businesses and NGOs have a long history of advocating their interests in international fora. NGOs participated in the League of Nations' meetings, and their participation in United Nations processes was formalized via Article 71 of Chapter 10 in the UN Charter. In 1948, 41 NGOs and

trade associations held consultative status with the UN. By 1992, desire to participate in the UN's "Earth Summit" conference in Rio drove that number to nearly 1,000. Today over 4,000 NGOs and trade associations have consultative status, which allows them formally participate in UN proceedings by submitting written position statements, presenting oral statements during meetings, setting up booths outside of conference rooms and organizing events (UNOG 2014).

All of these methods were used by private and civil society actors at the five international negotiating conferences (INCs) of the UN's Minamata Convention on Mercury to fight for their positions with regard to ASGM. Actors with both average or above in-link counts *and* high INC attendance (presence at three or more of the five INCs) include: the Artisanal Gold Council, the Alliance for Responsible Mining, Human Rights Watch, the International Council on Metals and Minerals, and the International Persistent Organic Pollutants Elimination Network. The first three of these actors work on all aspects of ASGM, while the last two focus on all aspects of the gold industry (one of which is ASGM) and all aspects of chemical pollution (one of which is mercury), respectively.

Of the actors focusing solely on ASGM, the Artisanal Gold Council and Human Rights Watch were most active at the INCs while the Alliance for Responsible Mining adopted more of an observer role. The Artisanal Gold Council (AGC) is an NGO working to create "profound positive changes in the ASGM sector globally, including a significant reduction in global mercury emissions, the formalization of ASGM and the improvement of livelihoods of the millions of people currently involved in the sector" (AGC 2014). Represented at all five of the Minamata Convention INCs, AGC contributed to a documentary film on ASGM that was played for all delegates at the opening congregation of INC4, delivered oral and written presentations to delegates and attendees, and held multiple one-on-one meetings with conference attendees of all types. Its advocacy emphasizes the under-utilized potential of the sector for economic development, encouraging formalization (as opposed to criminalization) and technological improvements for working with mercury (as opposed to banning mercury's use) as focal points for reform efforts. One technique AGC uses to raise money for its endeavors is selling 'ethical' gold coins from the sites it helps to reform (AGC 2014).

In its stance on mercury, the Artisanal Gold Council is in opposition to views held by the International Persistent Organic Pollutants Elimination Network (IPEN), which advocates an eventual ban on mercury trade for use in ASGM. Like the Artisanal Gold Council, IPEN was present at all INCs and had an especially large delegation, enabling it to dispatch representatives to all "contact group" meetings in which the details of the treaty text were negotiated. These meetings frequently overlap and continue for multiple hours past midnight, so having multiple fresh delegates able to push opinions through at key moments of negotiator fatigue can be a useful, albeit expensive, strategy. IPEN representatives did, indeed, play very active roles in these meetings, engaging delegates of all types in lively debates about the necessity of including treaty language that bans the use of mercury in ASGM and promotes the transfer of chemical-free mining technology. Both IPEN and AGC had booths in the room designated for breaks, meetings and NGO advocacy across the hall from the main negotiating room, and IPEN additionally held side events focused on the unique vulnerability of women, who often work with mercury more than men because these steps in the gold production process require less brute strength. Women, IPEN argues, should receive specialized protections given their roles as child-bearers and child-care providers.

Children are particularly susceptible to mercury's harms because their smaller bodies result in greater chemical concentrations and their neurological and cardiovascular systems are still

under development. The rights of children to health and freedom from labor were the focus of Human Rights Watch (HRW), which was represented at three of the INCs and adopted a particularly intense and personalized approach to advocacy. In addition to drafting specific language that they would like to have included in the treaty and distributing it in a document to all delegates in the text negotiation meetings, HRW formed an in-depth personal relationship with an African delegate over the course of several days and INCs. In addition to engaging this delegate in intense discussions over meals and coffees in between and after formal negotiating sessions, they continued to coach the delegate during contact group meetings, supplying them with notes and updates on proposed stances as the negotiations progressed.

The tactics of Human Rights Watch and the Artisanal Gold Council seemed to work better than those of IPEN, as their interests are represented in Article 7 and Annex C of the Minamata Convention text. Article 7 states that countries should work to “reduce and *where feasible* eliminate” mercury use in ASGM, and that parties with “more than insignificant” levels of ASGM within their borders must create National Action Plans (NAPs) for transforming the sector. Required elements of the NAPs are provided in Annex C, and include “steps to facilitate the formalization or regulation of the ASGM sector” (AGC’s focus) and “strategies to prevent the exposure of vulnerable populations, particularly children” (HRW’s focus). IPEN’s interests are at least partially represented by Annex C’s requirement for strategies to protect pregnant women and women of child-bearing age and its note that parties “may” include strategies to introduce and promote mercury-free mining methods. The ideational seeds planted by their mercury-free advocacy may bear more fruit over the long term.

The International Council for Metals and Mining (ICMM) was also present at all five INCs, although they mostly observed the negotiation proceedings rather than actively argued their positions. As advocates for the large-scale gold mining industry, their goal was simply to ensure that no regulatory demands were placed on their corporate constituents, and none were. Theoretically, delegates could have required or suggested that large-scale gold mining firms include ASGM reform in their corporate social responsibility initiatives, but to date such activities (discussed in the next two sections) remain strictly voluntary.

## *5.2 Partnering with Public Actors*

The second method private and civil society actors are using to combat mercury emissions from ASGM is formally offering their services to help implement national government or IGO policies, which is often called forming a “public-private partnership” (PPP). PPPs have long been studied in the realm of domestic politics, but their functionality at the global governance level only garnered attention in the last ten years (Borzel and Risse 2002; Pattberg 2012). PPPs were lauded as promising governance approaches to the challenge posed by global supply chains to environmental protection at the World Summit on Sustainable Development in Johannesburg in 2002. Since then a variety of PPP forms have emerged.

One common form of PPP is when an NGO is contracted by an IGO or national government to provide capacity building and technology transfer services to developing countries to enable them to comply with treaty stipulations. In addition to its lobbying activities reviewed in the previous section, the Artisanal Gold Council (AGC) is also using this method of encouraging ASGM reform. One way they are doing this is by marketing themselves as a consultant to developing country governments who are required by the Minamata Convention to draft the aforementioned National Action Plans (NAPs) for ASGM. AGC recently published a training manual for designing and implementing a public health strategy for ASGM on their website for free, noting that it specifically addresses three elements that must be included in NAPs. AGC has

also formally contracted with several public actors—the Strategic Approach for International Chemicals Management (SAICM), United Nations Industrial Development Organization (UNIDO), General Environmental Facility (GEF), and the United States Department of State—to build the capacities of mining communities and governments in the West African countries of Ivory Coast, Burkino Faso, Mali, and Senegal. In Ivory Coast, for example, AGC conducted a two-day training session with government representatives and other stakeholders on how to design the NAPs and ASGM inventories (i.e. measures of the number of miners, amount of mercury used, etc.) required by the treaty, and will soon return to help these representatives implement the designs. AGC has expertise in measuring the amount of mercury used in ASGM, as they were contracted by UNEP to provide the estimates used in the 2013 Global Mercury Assessment (AGC 2014).

A second form of PPP is when private actors create joint projects with public ones to gain international recognition for their firm's or their sector's corporate social responsibility (CSR) efforts. Like the Artisanal Gold Council, the International Council on Metals and Minerals (ICMM) also has a repertory of action beyond lobbying. In 2001, it partnered with the World Bank's International Finance Corporation, which works to promote growth in the private sector of developing countries, to create a program called "Communities and Small-Scale Mining" (CASM). CASM's goal was to reduce poverty by building sustainable communities in countries where ASGM is prevalent. One of its key strategies for achieving this goal was building "positive and productive relationships amongst local communities, large scale mining companies and government agencies within an equitable and effective legal framework" (CASM et al. 2010). Interactions between large-scale mining (LSM) and artisanal and small-scale mining (ASM) are increasing due to the high price of gold in recent years and the limited geographical areas in which it is found. Violent conflicts between the two arise when discrepancies over land rights lead both ASM and LSM to take place on the same plot of land. Governments currently have financial incentives to allot land rights to LSM firms who can pay more for the property and deliver ongoing royalties, and CASM encouraged these firms to incorporate ASM populations in their CSR efforts rather than to force them off the land via private security contractors (CASM et al. 2010).

One of CASM's premiere programs was a partnership between Barrick Gold Corporation, the world's largest gold mining company, and the government of Tanzania, Africa's fourth largest gold producer yet one of the world's poorest countries (CASM et al. 2010; Barrick 2013; UNDP 2014). This PPP within a PPP took place in the North Mara region of Tanzania, next to Barrick's a large open-pit gold mine of the same name. The idea was to create a 'model mine' for ASGM that would have three key features: easy access to official land rights, technology that remedies the negative health and environmental impacts of current process method (e.g. mercury use), and the connection of the ASM gold to 'fair trade' markets abroad. The estimated investment to get the model mine up and running was \$1.7 million dollars, an amount the program expected the mine would be able to repay in approximately two years. This payment would go into a revolving fund, which would use the money to invest in the next model mine in a new community. According to the author's interviews with a CASM representative in 2011 and the findings of Hilson and McQuilken (2014), however, it appears that CASM was unable to secure the funding it needed. The model mine never materialized and CASM itself seems to have institutionally shut-down sometime between 2011 and 2014.

Barrick, however, is continuing its CSR operations in North Mara region. In 2013, a PPP between Barrick, the Tanzanian police force, and the NGO Search for Common Ground

conducted training sessions to improve the performance of all security forces active in the mining community due to the continuation of human rights violations since the first reports of sexual assaults and killings emerged in 2011 (Barrick 2011, 2013; Day 2011; Vidal 2013; York 2014). Although well-intentioned, this program has not proven effective to date. As recently as July 2014, up to ten artisanal miners were allegedly shot by joint Tanzanian-Barrick security forces after they breached the site's borders to clandestinely mine gold (McVeigh 2014).

Accordingly, opinions on the merits of PPPs are as diverse as their types. Proponents see them as the solutions to the implementation gaps plaguing multilateral treaties since they funnel money and power away from corrupt governments and bloated bureaucracies to efficient and dedicated firms and NGOs. Critics, however, say that such delegation of public authority creates democratic deficiencies and tends to privilege the interests of "Northern" civil society and wealthy multinational corporations (Cadman 2011; Hilson and McQuilken 2014). For better or worse, their increasing presence in the global governance landscape is emblematic of the larger neoliberal governance trend of delegating the provision of collective goods like security and human rights to private and civil society actors. Since this trend is likely to continue (Schmidt and Thatcher 2013), the study PPPs remains warranted.

### *5.3 Bypassing Public Actors*

A third method used by private and civil society actors to reduce mercury emissions from ASGM is to bypass public actors altogether. Similar to some forms of public-private partnerships, such Barrick's CSR projects detailed in the previous section, these methods rely on market-based incentives rather than the threat of punishment from governments. Proponents of such market-based methods see political consumerism as an important social movement to strengthen, and the market as a key site for political expression (Micheletti 2003). Unlike all PPPs, however, the methods discussed in this section completely forgo the active partnership of governments (governments may, however, serve as project donors, which may blur advocacy classification in certain cases). Advocacy methods that bypass public actors usually take one of three forms: on-the-ground capacity building projects such as the technology transfer programs run by the Blacksmith Institute (Blacksmith 2014), retail campaigns to mobilize political consumption markets such as ethical retailer CRED's or the Fair Jewelry Action or Ethical Metalsmith's efforts (CRED 2014; FJA 2014; Ethical Metalsmiths 2014;), or stand-alone regulations created by NGOs like Fairtrade International or trade associations like the World Gold Council (FLO 2014; WGC 2014). Stand-alone regulations are a particularly prevalent method for governing the gold industry, but of the nine individual regulations listed in Table 5, less than half explicitly regulate environmental issues, and only two regulate both ASGM and mercury. These two regulators are the civil society certification organizations Fairtrade International (FLO) and the Alliance for Responsible Mining (ARM).

[Insert Table 5]

**Table 5: Main Private and Civil Society Stand-Alone Regulations for Extractive Industries and Issues**

<i>Regulatory Institution</i>	<i>Authority Source</i>	<i>Regulation Type</i>	<i>Regulation Focus</i>	<i>Regulates ASGM?</i>	<i>Regulates Mercury?</i>
Extractive Industries Transparency Initiative	Civil Society	Reporting	Development	NO	NO
Responsible Jewelry Council	Private	Certification	Environment, Social	NO	NO
Cyanide Code	Civil Society	Code of Conduct	Environment	NO	NO
Voluntary Principles	Both	Code of Conduct	Social, Conflict	NO	NO
Initiative for Responsible Mining Assurance	Both	Certification	Environment, Social	NO	YES
Global Reporting Initiative	Civil Society	Reporting	Any	CAN	CAN
No Dirty Gold	Civil Society	Code of Conduct	Environment, Social	CAN	CAN
World Gold Council	Private	Certification	Conflict	CAN	NO
Conflict Free Smelter	Civil Society	Certification	Conflict	YES	NO
Fairtrade International	Civil Society	Certification	Environment, Social, Development	YES	YES
Alliance for Responsible Mining	Civil Society	Certification	Environment, Social, Development	YES	YES

Source: Regulatory institution's websites

Certification organizations are NGOs that originally focused on creating sets of voluntary production and trading standards for agricultural “cash crop” products (e.g. coffee, bananas, cocoa). Producers of these crops historically suffered from colonial exploitation via market distortions and contemporarily suffer from industrialized countries’ domestic subsidies and trade policies (Bates 2014). Since their emergence in the 1970s, these alternative trade organizations have grown in strength and numbers, and their target products have grown to include timber, fish, apparel, handicrafts, liquor, tourism and most recently minerals (Auld 2014).

Fairtrade International (FLO) emerged in 1997 as a transnational umbrella organization to unite and govern approximately 17 national fair trade organizations and 3 producer networks in Africa, Latin America, and Asia (FLO 2014). The first of these national organizations was founded in the Netherlands in 1988 by Dutch development NGO Solidaridad. It was called the “Max Havelaar” organization, and it served as a model for the fair trade movement which spread across Europe and North America in the early 1990s. In 2002, a single label was adopted to create a unified international brand and symbolize the harmonized nature of the organization’s product regulations (called “standards”). Based on the neoliberal principle of “trade, not aid,” FLO’s mission is to “connect disadvantaged producers and consumers, promote fairer trading conditions and empower producers to combat poverty, strengthen their position and take more control over their lives” (FLO 2014).

In 2011, FLO introduced gold as their 19<sup>th</sup> certified product after encountering the work of the Alliance for Responsible Mining (ARM), a transnational non-governmental organization partnering with the artisanal mining cooperative Oro Verde. Based in the Choco Region of Columbia, in the middle of a high-conservation value rainforest, Oro Verde miners use a variety of environmentally friendly mining practices (e.g. mercury-free processing and site restoration) to extract and sell gold for the benefit of its marginalized Afro-Caribbean population. The Alliance for Responsible Mining (ARM) was launched in 2004 as joint effort between representatives of Oro Verde and other transnational organizations to replicate Oro Verde’s ethical and traceable supply chain model to other regions of Latin America (ARM 2014). Unlike FLO which was formed to govern an array of products globally, ARM’s sole focus was artisanal gold sourced from Latin America.

In 2006, ARM drafted a certification program called “Standard Zero” to regulate the mining, business and governance procedures in mining cooperatives in Peru, Bolivia, and Columbia. But while ARM excelled in building these cooperatives’ capacity to comply with Standard Zero’s stipulations, ARM lacked the financial and marketing resources to bring their program to scale internationally. In 2009, with one mining cooperative certified (Oro Verde) and 4-5 others nearly certifiable, ARM formed a 3-year pilot partnership with alternative trade leader FLO. The partnership’s strategy was to “divide and conquer”: ARM was responsible for on-the-ground program implementation while FLO was responsible for the international marketing campaign. Together, they assembled financially and ethically viable gold supply chains—from the miners, to the cooperatives, to the traders, refiners, manufacturers, retailers and consumers.

Their joint product and standard launched in 2011 in the UK under the label “Fairtrade and Fairmined Gold.” The basic certification demanded that miners use a piece of mercury-reducing technology called a “retort.” In exchange, they would receive 95% of the London Bullion Market Price for gold (far higher than the 70% price usually fetched via legal or black market traders) plus 10% of that price as a ‘premium’ which was to be spent by the mining cooperative on community development programs according to a democratic vote by the cooperative’s members. Miners willing to adopt more advanced technology or other methods that enabled them to forgo mercury use altogether could apply for the Ecological Gold label, which gave cooperatives a 15% instead of 10% premium to reinvest in their communities. In addition to managing mercury responsibly, all certified mining cooperatives had to gain legal permits, organize democratically, and ban child labor (see original Fairtrade and Fairmined Standard, provided on ARM’s websites).

In 2013, however, this joint venture ended. The three-year pilot period was over, and rather than renewing their contract, FLO and ARM decided to move forward as separate entities. Consumers had complained that the dual label was confusing and that the price point was too high (a result of record high gold prices circa 2011) (JCKOnline 2013). On the production side, mining organizations complained that the certification process was too cumbersome and costly (ARM 2014). FLO and ARM, for their part, disagreed on whether or not to allow “mass balancing” under the label, which is the process of combining “ethical” with non-ethical materials. This would mean that a ring bearing the Fairtrade and Fairmined Label could be “made with” ethical gold but contain as little as 10% certified materials, or it could be made with no actual certified gold, but the money from the purchase would still go towards supporting certified miners (Ethical Metalsmiths 2012; Valerio 2013; McQuilken 2014). FLO and ARM state publically that their separation was amicable and that they will both cooperate if it seems beneficial in the future. But they are now selling under different labels, have different strategies for achieving similar goals, and are pitching to the same markets, both in terms of mining organizations (they both plan to expand across Latin America and Africa instead of specializing geographically) and jewelry retailers (they are both aimed at ethical boutiques and high-end specialty retailers). This makes them appear more like competitors than allies or partners.

[Insert Image 1:]

**2009-2013**  
**Joint FLO and ARM Regulation and**



**2013-Present**  
**Separate Regulations and Labels**



**(FLO)**



**(ARM)**

Source: Organizations' websites, accessed October 2014

Producer groups and retailers must now choose whether to certify with or buy from one organization or both. The major changes to the standards after their split is in the calculation of the social premium to be spent on community development projects. Instead of premium payment equal to 10% of the international price of gold, ARM's solo certification program now pays a fixed amount of \$4,000/kg for those complying with their basic regulation and \$6,000/kg for those complying with their mercury-free Ecological Gold regulation. FLO likewise changed to a fixed payment scheme for its basic regulation, but pays miners less per kilogram than ARM (FLO pays \$2,000 compared to ARM's \$4,000). For their Ecological Gold regulation, FLO has kept things the same as they were under the joint program: 15% of the international price of gold.

Determining how these changes impact miners' decisions about which organizations to certify with and whether or not to go mercury free are complicated tasks worthy of future research (see Section 6), but it is clear that one important factor in their decisions will be the price of gold. Table 6 shows that for miners willing and able to go mercury-free, ARM will pay them more if the price of gold is below \$1,134/oz., and FLO will pay them more if the price of gold is above \$1,134/oz. Regarding program participation, the trend between 2011 and 2014 has been for producer groups to withdraw from certification programs either voluntary or due to compliance failures. FLO went from certifying six producer organizations across three countries under the joint program to certifying only two cooperatives in Peru (Sotrami and Aurelsa) under its solo "Fairtrade" label (FLO 2014), and it is unclear to date how many producers, if any, ARM has certified under its solo Fairmined Gold label.

[Insert Table 6]

Table 6: Sensitivity of Social Premiums to Gold Prices

Year	Price of Gold (USD/oz.)	Ecological Gold Social Premium from ARM	Ecological Gold Social Premium from FLO
<i>Equal Payment Price</i>	<i>\$1,134</i>	<i>\$6,000</i>	<i>\$6,000</i>
2005	\$446	\$6,000	\$2,360
2009	\$892	\$6,000	\$4,720
2011	\$1,805	\$6,000	\$9,550
2014	\$1,380	\$6,000	\$7,302
2015 (forecast)	\$1,200	\$6,000	\$6,349

Source: Gold prices from [www.goldprice.org](http://www.goldprice.org), accessed December 2014



Certification organizations are prime examples of non-state market-based regulatory approaches, of which there are several critiques. Vogel (2006) argued that the ‘market for virtue’ is small and meaningful change is expensive. Since actors tend to put their need for organizational survival first which typically means prioritizing financial considerations (Cooley and Ron 2002), participation in voluntary schemes often only attracts actors who are either rich or already performing well. This means that civil society regulations such as those in the ‘fair trade’ movement often fail to reform the worst offenders and assist those most in need (Jaffe 2007, Borck and Coglianese 2009). Dauvergne (2008) further points out that the social or environmental gains achieved in one sector or dimension are often offset by losses in others, while Cadman (2011) echoes complaints launched at PPPs—that programs which bypass public actors often lack accountability, leading to democratic deficits and challenges regarding legitimacy. Lipshutz (2005) sums up these critiques by arguing that the market is an ineffective tool to solve the problems it helped to create. Similar critiques, however, can also be launched at several public regulatory initiatives, and critiques seldom evaluate organizations’ ability to learn from this feedback and evolve.

## **6. Conclusion: Current Functionality of Gold and Mercury Governance and Avenues for Future Research**

Any comprehensive plan for global mercury governance must include improved governance of the gold industry, which is responsible for nearly 40% of mercury pollution globally (UNEP 2013). Likewise, any comprehensive plan to implement the UN’s vision of a “green economy” must incorporate protocols to address the full range of human development problems associated globalization, from conflict to chemicals to child labor (Najam and Selin 2012; Bulkeley et al 2013). Taken together, there is ample international energy for improved governance of both gold and mercury. Yet whether this energy will manifest as effective reduction of mercury pollution from gold mining is an open question. The answer will depend on the values, interests, and resources of the actors comprising the transnational advocacy networks governing these issues.

This article provides an exhibition of what private and civil society actors are doing to support or complement the Minamata Convention and reduce mercury emissions from artisanal and small-scale gold mining (ASGM) more generally. It shows that the Mercury TAN is dominated by public actors, the Gold TAN by private and civil society actors, and that the composition of the ASGM TAN is more mixed. Further, it contributes detailed analysis of three advocacy methods used by these actors to impact gold and mercury governance: lobbying public actors, partnering with public actors, and bypassing public actors. It concludes by arguing that all actor types and advocacy methods make valuable contributions to the governance of global supply chains, but that more research on the functionality of private and civil society actors is needed to fully understand their governance potential and promote its fruition. Four trajectories for future research are proposed.

One line of research should focus on the dynamics of cooperation and competition between advocates. For example, there are many similarities between the Artisanal Gold Council (AGC), the Alliance for Responsible Mining (ARM), and Fairtrade International (FLO): they all conduct on-the-ground capacity building projects in ASGM communities, promote technology adoption to reduce mercury use, and sell ‘ethical’ gold on global markets. However, they seldom reference one another in their advocacy, and they appear to be moving in the direction of competition as opposed to cooperation. Research is needed on why this competitive dynamic is occurring, and who wins and loses from its emergence. Scholars also need to explain the divergent response of

these three actors with regard to the Minamata Convention. Why is AGC, but not FLO or ARM, working directly with governments to assist in drafting their Minamata Convention affiliated National Action Plans, when FLO and ARM are both equally qualified to do so? Finally, the behavior of private sector actors like mining corporations and jewelry retailers deserves more attention. What proportion of gold mining firms are incorporating ASGM in their corporate social responsibility initiatives, and what's driving the number and nature of such projects?

A second line of research should work to progress scholarly methods of studying transnational advocacy networks (TANs). Hyperlink analysis, as has been used in this article, is an excellent first step for network analysts, but further steps need to be taken. The full, contextually-sensitive meaning of in-links, for example, should be explored with in-depth case studies and actor interviews where possible. *Why* actors are linking to each other is equally important as *whether* they are linking. Clusters of highly inter-linked actors should also be studied, as these might be hubs where collective action on an issue emerges, or they might denote the borders of factions and cleavages within networks. Notions of power and prestige in a network should also be refined, potentially through eigenvector analysis, which is a more advanced statistical tool often used in American politics research to determine which high in-link actors are most closely connected to other high in-link actors (Box-Steffensmeier et al. 2013, Ward et al. 2011).

However, sole reliance on the internet to map network membership and power could mask important pieces of data that other research methods bring to light. There are, for example, advocates that were highly active at the Minamata Convention negotiations that didn't receive an average- or greater than average in-link count. The Massachusetts Institute of Technology (MIT), for example, sent representatives to three negotiating sessions where they actively discussed mercury science one-on-one with delegates and, for the fifth and final session, reported live from the proceedings to the public through Twitter and a specialized blog (MIT 2014). Yet their team isn't recognized in the online advocacy communities captured by co-link analysis. Conversely, Oxfam International received the third highest number of in-links in the Gold TANs, yet never attended a single Minamata Convention negotiating session, despite their focus on small-scale producers and natural resources, and lobbying being one of their key methods of advocacy (Oxfam 2014). What's driving these findings, and what do they mean for scholarly and practical understandings of gold and mercury networks and governance?

A third line of research flows directly from the second: once the truly powerful network members are accurately identified, what drives their choice of specific advocacy issues and methods? Why are actors like Greenpeace (which runs a toxic pollution campaign) and the World Wide Fund for Nature (WWF) (which promotes healthy ecosystems and specializes in the type of on-the-ground capacity building that is essential to ASGM reform) conspicuously absent from all three TANs? Why are so many of the private and civil society actors advocating for change in the gold supply chain focused on conflict rather than environmental issues? And of those who *do* regulate environmental issues associated with ASGM, what factors drive the variance in their choices about the best types and degrees of incentives to promote change? These shifts in focus and discourse need further attention (Childs 2014), as they are important drivers of the policies that eventually emerge.

Once policies are launched, the fourth line of research should assess their effects. One category of effects to study should be the on-the-ground impacts of advocacy methods on the lives of mining communities and the health of ecosystems. Are miners willing and able to comply with new regulations? Are the regulations strict enough to create meaningful change?

Research on the continually evolving certification organizations regulating ASGM should prove particularly fruitful. Studies should uncover why miners are choosing to certify with one organization rather than another, and what the social, economic, and environmental consequences of these decisions are. They should also ask about the breadth, depth, and longevity of the population of ethical consumers willing to support such certification initiatives. It is important to note that these initiatives face several threats to their ability to meaningfully reform ASGM. First, it is impossible for certification organizations to *completely* by-pass the government in their projects. The mining cooperatives they certify must be legal, and as discussed in this paper, governments have many incentives to make such formalization difficult. So in many ways private and civil society governors face the same difficulties in implementing meaningful change as public global governors do. Second, it's important to remember that gold is a commodity bought by the consumer in low quantities at high prices, which could present a challenge to certification organizations, which are used to governing products with the reverse characteristics (high volume, low value) (Hilson 2008). A second category of effects to study is the impact of increased gold and mercury advocacy and policy on the governance of other industries and public health problems. Are there spillover effects such that increased governance attention to gold leads to more advocacy action on diamonds, gemstones, and the jewelry industry as whole, or to other metals and industries, such as the coltan used in personal electronic devices? Is increased attention to mercury inspiring new initiatives on other hazardous substances (e.g. lead)?

Understanding why and how organizations choose pursue specific issues and the impacts their choices have on human and environmental well-being will shed significant light on humanity's ability to harness the power of the global economy and use it for good. The simultaneous trends of unsustainable consumption and persistent pockets of poverty may start to be reversed when advocates for change start to learn from the past and from each other. Public, private and civil society actors all have important roles to play to ensure that the treasures of the earth remain a benefit (and not a curse) to communities worldwide. The more knowledge society accumulates on these actors' contributions, mistakes, and potential, the better for current and future generations.

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### **References**

- Ali, Saleem, *Treasures of the Earth: Need, Greed and a Sustainable Future* (Yale University Press, 2009)
- Alliance for Responsible Mining (ARM), Accessed October 2014. <http://www.communitymining.org/en>
- Artisanal Gold Council (AGC), Accessed October 2014. <http://www.artisanalgold.org/>
- Avant, D., Finnemore, M. and Sell, S., eds., *Who Governs the Globe?* (Cambridge University Press, 2010).
- Auld, Graeme. *Constructing Private Governance: The Rise and Evolution of Forest, Coffee, and Fisheries Certification*. Yale University Press, 2014.

- Auld, Graeme, and Lars H. Gulbrandsen. "Private Regulation in Global Environmental Governance." *The Handbook of Global Climate and Environment Policy* (2013): 394-411.
- Barrick 2011 <http://www.barrick.com/investors/news/news-details/2011/North-Mara-Mine-Tanzania/default.aspx>
- Barrick 2013 Corporate Social Responsibility report: <http://barrickresponsibility.com/media/11570/2013-Barrick-Gold-Corp-Performance-Update.pdf>
- Bates, Robert H. *Markets and states in tropical Africa: the political basis of agricultural policies*. Univ of California Press, 2014 (first edition 1981).
- Blacksmith Institute, <http://www.blacksmithinstitute.org/projects/display/154>, accessed October 2014
- Bloomfield, Michael, *Power, profit, and principles: Industry opportunity structures and the political mobilisation of jewelers*, PhD Dissertation, London School of Economics, 2014. (a)
- Bloomfield, Michael John. "Shame campaigns and environmental justice: corporate shaming as activist strategy." *Environmental Politics* 23.2 (2014): 263-281. (b)
- Bob, Clifford. 2005. *The Marketing of Rebellion: Insurgents, Media, and International Activism*. Cambridge: Cambridge University Press.
- Bob, Clifford. 2009. *The International Struggle for the New Human Rights*. University of Pennsylvania Press.
- Bob, Clifford. *The global right wing and the clash of world politics*. Cambridge University Press, 2012.
- Borck, Jonathan C., and Cary Coglianese. "Voluntary environmental programs: assessing their effectiveness." *Annual Review of Environment and Resources* 34 (2009): 305-324.
- Börzel, Tanja A., and Thomas Risse. "Public-Private Partnerships: Effective and legitimate tools of international governance." In *Complex sovereignty: On the reconstitution of political authority in the 21st century* (2005): 195-215.
- Box-Steffensmeir, Janet, Christenson, Dino and Mathew Hitt. "Quality over Quantity: Amici Influence and Judicial Decision making." *American Political Science Review*, 2013.
- Buckeley, Harriet; Jordan, Andrew; Perkins, Richard and Henrik Selin. "Governing Rio+20" *Environment and Policy Planning* C 31, 2013.
- Buthe, T. and Mattli, W. *The new global rulers: The privatization of regulation in the world economy* (Princeton University Press, 2011)
- Cadman, Timothy. *Quality and legitimacy of global governance: case lessons from forestry*. Palgrave Macmillan Ltd., 2011.
- Carpenter, Charli R. 2007. "Setting the Advocacy Agenda: Theorising Issue Emergence and Non-Emergence in Transnational Advocacy Networks." *International Studies Quarterly* 51 (4): 99-120.
- Carpenter, Charli R. 2011. "Vetting the Advocacy Agenda: Network Centrality and the Paradox of Weapons Norms," *International Organization* 65 (1)
- Carpenter, Charli. *"Lost" Causes: Agenda Vetting in Global Issue Networks and the Shaping of Human Security*. Cornell University Press, 2014.
- Childs, John. "From 'criminals of the earth' to 'stewards of the environment': The social and environmental justice of Fair Trade gold." *Geoforum* 57 (2014): 129-137.
- Communities and Small-scale Mining (CASM), International Council on Metals and Minerals (ICMM) and the International Finance Corporation/World Bank, *Working Together: How Large-scale Mining can Engage with Artisanal and Small Scale mining*, 2010.

International Council on Metals and Minerals (ICMM), <http://www.icmm.com/page/17638/new-publication-on-engaging-with-artisanal-and-small-scale-miners>, accessed October 2014.

Cooley, Alexander, and James Ron. 2002. "The NGO Scramble: Organizational Insecurity and the Political Economy of Transnational Action." *International Security* 27 (1): 5-39.

Crane, Andrew, ed. *The Oxford handbook of corporate social responsibility*. Oxford Handbooks Online, 2008.

CRED, <http://www.credsources.com/>, accessed October 2014.

Day, Leigh. <http://www.leighday.co.uk/International-and-group-claims/Tanzania>

Dashwood, Hevina S. *The Rise of Global Corporate Social Responsibility: Mining and the Spread of Global Norms*. Cambridge University Press, 2012.

Dauriz, Linda, Remy, Nathalie and Thomas Tochtermann, "A multifaceted future: The jewelry industry in 2020," McKinsey and Company, 2014. Accessed October 2014.

Dauvergne, Peter. *Shadows of Consumption: Consequences for the Global Environment* (MIT Press 2008)

Dingwerth, Klaus, and Philipp Pattberg. "Global governance as a perspective on world politics." *Global governance: a review of multilateralism and international organizations* 12.2 (2006): 185-203.

Ethical Metalsmiths, <http://ethicalmetalsmiths.org/blog/2012/an-urgent-appeal-for-your-support-to-save-the-fairtrade-gold-brand/>, accessed October 2014.

Fair Jewelry Action (FJA), <http://www.fairjewelry.org/>; accessed October 2014.

Fairtrade International (FLO), Accessed October 2014. <http://www.fairtrade.net/>

Finnemore, Martha. "Dynamics of Global Governance: Building on What We Know." *International Studies Quarterly* 58.1 (2014): 221-224.

Florini, Ann M., ed. *Third Force: The Rise of Transnational Civil Society*. Carnegie Endowment, 2000.

Green, Jessica F. *Rethinking private authority: Agents and entrepreneurs in global environmental governance*. Princeton University Press, 2013.

Hafner-Burton, "Sticks and stones: Naming and shaming the human rights enforcement problem", International Organization, 2008

Hafner-Burton, Emilie; Alexander Montgomery, Miles Kahler, "Network Analysis for International Relations." *International Organization* 63(2009): 559-592.

Hall, RB and Biersteker, TJ. *The emergence of private authority in global governance* (Cambridge University Press, 2002)

Healthcare Without Harm (HWH) website, <https://noharm.org>, accessed October 2014.

Hilson, G. (2014), 'Constructing' Ethical Mineral Supply Chains in Sub-Saharan Africa: The Case of Malawian Fair Trade Rubies. *Development and Change*, 45: 53–78. doi: 10.1111/dech.12069

Hilson, Gavin, and James McQuilken. "Four decades of support for artisanal and small-scale mining in sub-Saharan Africa: A critical review." *The Extractive Industries and Society* 1.1 (2014): 104-118.

Hilson GM. (2008) "Fair Trade Gold": Antecedents, Prospects and Challenges'. Elsevier *Geoforum*, 39 (1), pp. 386-400.

Jaffe, Daniel. *Brewing Justice*, University of California Press: 2007

JCK Online, Accessed March 2014. <http://www.jckonline.com/blogs/cutting-remarks/2013/08/30/fair-trade-gold-update>

- Kahler, Miles, ed. *Networked politics: agency, power, and governance*. Ithaca, NY: Cornell University Press, 2009.
- Keck, Margaret and Kathryn Sikkink, *Activists Beyond Borders*, Ithaca: Cornell University Press, 1998.
- Kitco, <http://www.kitco.com/news/2014-12-02/Average-Gold-Price-Seen-At-1200-Oz-In-2015-Silver-At-17-Oz-Commerzbank.html>, Accessed December 2014.
- Lipschutz, Ronnie D. "Power, politics and global civil society." *Millennium-Journal of International Studies* 33.3 (2005): 747-769.
- McQuilken, James. "‘Ethical Gold’ in sub-Saharan Africa: A Viable Empowerment Strategy?" Working Paper, 2014.
- McVeigh, Tracy. "Killings at UK-owned Tanzanian gold mine alarm MPs," *The Guardian*, July 2014.
- Micheletti, Michele. *Political virtue and shopping: Individuals, consumerism, and collective action*. Palgrave Macmillan, 2003.
- MIT, Accessed October 2014. <http://mercurypolicy.scripts.mit.edu/blog/?tag=minamata-convention>
- Moon, Jeremy, Nahee Kang, and Jean—Pascal Gond. "Corporate social responsibility and government." In *Oxford Handbook of Business and Government*, Oxford University Press, Coen, David, Wyn Grant, and Graham Wilson eds; Oxford University Press, 2011.
- Najam, Adil, and Henrik Selin. "Institutions for a green economy." *Review of Policy Research* 28.5 (2011): 451-457.
- Oxfam International, <http://www.oxfam.org/en/explore/issues-we-work-on>, Accessed December 2014.
- Park, Han Woo. "Hyperlink network analysis: A new method for the study of social structure on the web." *Connections* 25.1 (2003): 49-61.
- Pattberg, Philipp H., ed. *Public-private partnerships for sustainable development: Emergence, influence and legitimacy*. Edward Elgar Publishing, 2012.
- Porter, Michael E., and Mark R. Kramer. "Creating shared value." *Harvard business review* 89.1/2 (2011): 62-77.
- Prakash, Aseem, and Mary Kay Gugerty, eds. *Advocacy organizations and collective action*. Cambridge University Press, 2010.
- Price, Richard. "Transnational civil society and advocacy in world politics." *World Politics* 55.04 (2003): 579-606.
- Rogers, Richard. "Mapping Web Space with the Issuecrawler." *GovCom.org*, (2006).
- Ron, James, Howard Ramos, and Kathleen Rodgers. "Transnational information politics: NGO human rights reporting, 1986–2000." *International Studies Quarterly* 49.3 (2005): 557-588.
- Rosenau, James, 1995. "Governance in the 21st Century," *Global Governance*.
- Schmidt, Vivien A. "Discursive Institutionalism: The Explanatory Power of Ideas and Discourse." *Annual Review of Political Science*, 2008.
- Schmidt, Vivien Ann and Mark Thatcher, eds. *Resilient liberalism in Europe's political economy*. Cambridge University Press, 2013
- Selin, Henrik. "Global Environmental Governance and Regional Centers," *Global Environmental Politics* 12 (3): 18–37, 2012.
- Selin, Henrik. "Global Environmental Law and Treaty-Making on Hazardous Substances: The Minamata Convention and Mercury Abatement," *Global Environmental Politics*, 2014.
- Selin, Noelle E. "Global change and mercury cycling: Challenges for implementing a global mercury treaty." *Environmental Toxicology and Chemistry* 33.6 (2014): 1202-1210.

- Siegel, Shefa, and Marcello M. Veiga. "Artisanal and small-scale mining as an extralegal economy: De Soto and the redefinition of "formalization"." *Resources Policy* 34.1 (2009): 51-56.
- Siegel, Shefa, and Marcello M. Veiga. "The myth of alternative livelihoods: artisanal mining, gold and poverty." *International Journal of Environment and Pollution* 41.3 (2010): 272-288.
- Sippl, Kristin and Henrik Selin, "Global Policy For Local Livelihoods: Phasing Out Mercury From Artisanal and Small-Scale Gold Mining," *Environment* 54(3), 2012.
- Spiegel, Samuel J., and Marcello M. Veiga. "International guidelines on mercury management in small-scale gold mining." *Journal of Cleaner Production* 18.4 (2010): 375-385.
- Tarrow, Sidney. *The new transnational activism*. Cambridge University Press, 2005.
- Templeton, Jessica, and Pia Kohler. "Implementation and Compliance under the Minamata Convention on Mercury." *Review of European, Comparative & International Environmental Law* 23.2 (2014): 211-220.
- Thelwall, Mike. "Interpreting social science link analysis research: A theoretical framework." *Journal of the American Society for Information Science and Technology* 57.1 (2006): 60-68.
- UNEP, Global Mercury Assessment 2013: Sources, Emissions, Releases and Environmental Transport. Geneva: United Nations Environment Programme. 2013.
- Minamata Convention on Mercury Pollution, Accessed October 2014, <http://www.mercuryconvention.org/>
- UN Development Program (UNDP), *Human Development Report 2014-- Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience*, 2014.
- UNOG, Accessed October 2014.  
[http://www.unog.ch/80256EE60057E07D/\(httpHomepages\)/80A3DF6327DDD70180256F040066C85C?OpenDocument](http://www.unog.ch/80256EE60057E07D/(httpHomepages)/80A3DF6327DDD70180256F040066C85C?OpenDocument)
- Ward, Michael, Stovel, Katherine and Audrey Sacks. "Network Analysis and Political Science." *Annual Review of Political Science*, 2011.
- Weiss, Thomas G. "Governance, good governance and global governance: conceptual and actual challenges." *Third world quarterly* 21.5 (2000): 795-814.
- Wong, Wendy H. *Centralizing principles: How Amnesty International shaped human rights politics through its transnational network*. Doctoral Dissertation, UC San Diego. 2008.
- World Gold Council (WGC), Accessed October 2014, <http://www.gold.org/supply-and-demand/gold-demand-trends#full>
- Valerio, Greg. *Making Trouble: Fighting for Fair Trade Jewellery*. Lion Books, 2013.
- Vidal, John. July 31 2013. <http://www.theguardian.com/global-development/2013/jul/30/tanzania-african-gold-mining-deaths-barrick>
- Veiga, Marcello M., Gustavo Angeloci-Santos, and John A. Meech. "Review of barriers to reduce mercury use in artisanal gold mining." *The Extractive Industries and Society* (2014).
- Vogel, David. *The market for virtue: The potential and limits of corporate social responsibility*. Brookings Institution Press, 2006.
- York, Geoffrey. Aug 26 2014. <http://www.theglobeandmail.com/report-on-business/international-business/deadly-clashes-continue-at-african-barrick-gold-mine/article20216197/>