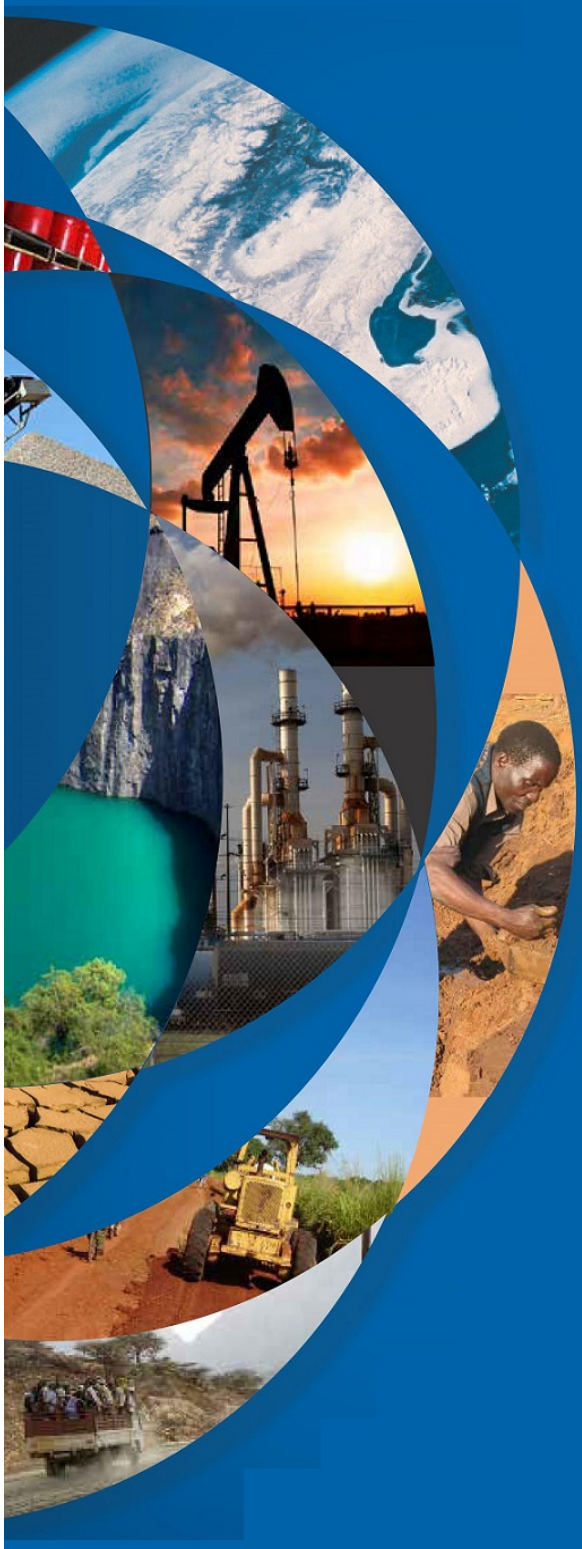

BOOK OF ABSTRACTS

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677: Rhetoric of Sustainable Development in Industrial Symbiosis

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As scientific evidence exposes the need for paradigm shifts in the management of resources of industrialized societies (IPCC, 2019), initiating collective action towards such shifts remains challenging (Berkes, 2017). Industrial Symbioses (IS) are important examples of collective regional initiatives contributing to this shift. They aim at reducing environmental burden and improving economic performance by substituting raw inputs with compatible by-products or by achieving pooling and sharing practices (Chertow, 2000). These initiatives are for instance frequent in cement or energy production (Cao et al. 2020) but also cover the management of organic waste to build synergy with local agriculture (Wassenaar et al. 2014). Understanding social dynamics beyond IS may unlock new development potential, and help to translate a known need into real change.
Several authors suggest that an approach based on discourse analysis may lead to a better comprehension of IS initiatives. For instance, Queste (2016) shows the importance of rational myths (RM), which are collective justification for action (Holm, 1995), in collective waste management. We studied Industrial Symbiosis Initiatives (IS-I) as a succession of discourses and examined the key elements of these discourses, in order to improve the understanding of collective management dynamics. We selected 14 French IS-I based on national inventories (Oree, 2016, Ademe 2018), according to their diversity in terms of spatial range, type of synergies and type of actors involved. We identified discourses in these case studies, and focused in particular on the collective justification of actions - the RM - at different moments of the initiatives.
This analysis shows that an important number of the actions are undertaken as a collective commitment to normative, long term and ill defined objectives. Rhetoric studies used the term ideograph to designate words that embody such objectives, which have been shown to play an important role in the development of new technologies (McGuee, 1986; Joly 2010). We propose to expand the use of the term ideograph to designate these particular types of collective justifications, and analyse how these discourses integrate the broader ideograph of Sustainable Development (SD) (Brundtland, 1987, Bos et al. 2014). To deepen their description, we decompose the discourses according to the triple bottom line framework, often acknowledged as a normative objective of SD, which implies to improve at the same time the environmental preservation, the economical performance, and the social well-being. Figure 1 shows the diversity of situations in which ideographs are used regarding the stage of IS-I and the type of actors. It also suggests the relative importance of economical, ecological and social concerns through the practice of IS, decreasing in this order. Results lead us to conclude that (1) all IS-I contain at least one discourse that embeds one or more ideographs (2) These ideographs are present at all stages of IS-I, and mainly during the evolution, (3) they are used by both public and private actors, and (4) most IS-I involve all three dimensions of SD through ideographs but these are not simultaneously present in all discourses.

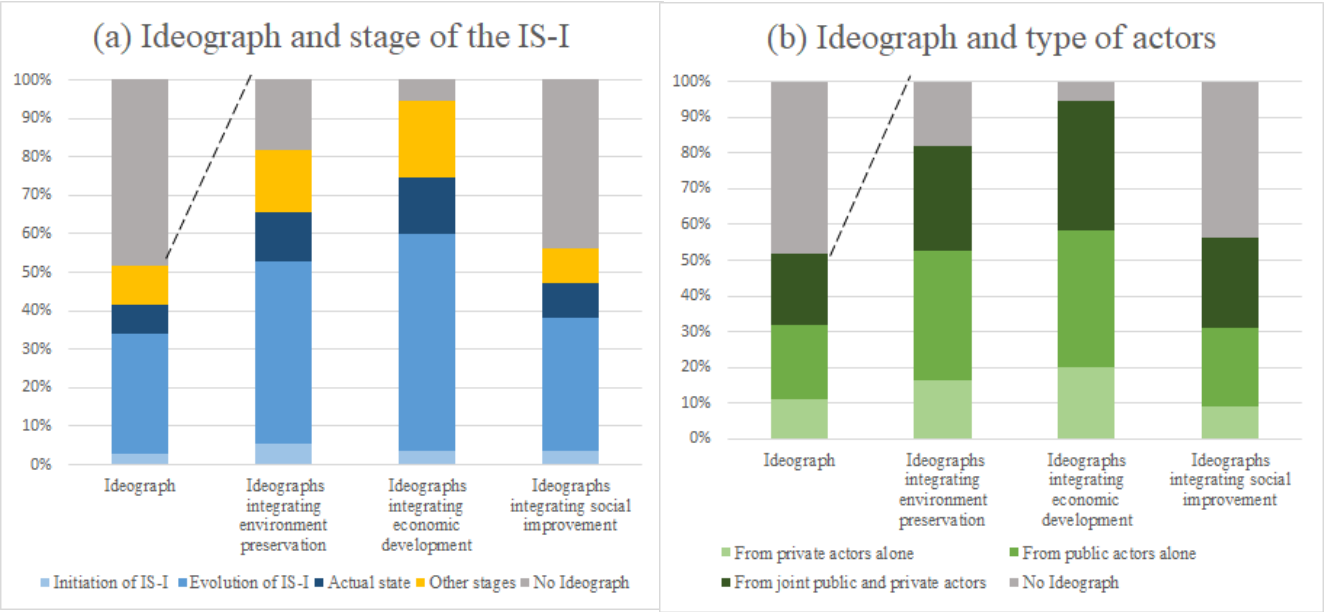

Figure 1 : References to ideographs among the discourses of 14 Industrial Symbiosis Initiatives (IS-I) and their link with sustainable development according to (a) the stage of the IS-I and (b) the type of actors formulating the discourse.

Our study remains limited to a certain type of collective action and a single national geographic area. The results suggest that it might not always be necessary to have a comprehensive knowledge of local situations to initiate and maintain collective action in the context of IS-I, since ideographs may be powerful collective justifications. The concept of plausible promise (Wassenaar et al., 2014; Douthwaite et al. 2002) may help to better characterize the performativity of these discourses, which is their ability to change the behavior of actors (Austin, 1962). Understanding the generation, diffusion and evolution of ideographs could then be an important lever to enhance collective actions such as IS-I.

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