

Partnership session summary

Industrial Symbiosis

09:00-10:30 Thursday 14 May

Moderator & Speakers:

- Dr. Rachel Lombardi, Director of Business Development, International Synergies Limited*
- Dr. Hussein Abaza, Senior Advisor to the Egyptian Environmental Affairs Agency*
- Mr. Anton Cartwright, Urban Futures Researcher at the African Centre for Cities*
- Mr. Solly Fourie, Head of the Economic Development and Tourism Department, Western Cape Government*
- Dr. Jane Nyakang'o, Executive Director of the Kenya National Cleaner Production Centre*
- Ms. Vanessa Redmond, Deputy Permanent Representative to the UN, British High Commission, Kenya*

Partnership session background

The Industrial Symbiosis partnership brings together public and private sector stakeholders from around the world to raise awareness of industrial symbiosis and its ability to foster green growth and eco-innovation through business opportunities in a circular economy. The goal of the industrial symbiosis partnership is to accelerate the roll-out of industrial symbiosis via global networks to deliver green growth and climate change mitigation.

The current take – make – dispose mentality leads to waste and inefficient resource use. In Europe for example, the commercial value of materials sent to landfill is estimated at over €5 billion annually. Finding innovative ways to collect, reprocess and reuse materials, create jobs and saves resources. Industrial symbiosis redirects waste streams and underutilised resources from one industry or activity to another. It is a key driver of green growth contributing to eco-innovation, job creation and resource efficiency; the OECD deems industrial symbiosis an “excellent example of systemic innovation vital for future green growth”. Integrating industrial symbiosis into existing activities is a low-risk, low-cost, practical and measurable approach, enabling a sustainable transformation in global consumption and production.

Partnership session goals

- Highlight successes of emerging industrial symbiosis in Africa
- Increase the quantity of industrial symbiosis programmes in Africa and identify potential funding/investment options
- Share lessons learned and challenges in delivering industrial symbiosis for public and private sector stakeholders
- Recruit additional institutional supporters to the industrial symbiosis partnership

The partnership is contributing to the proposed SDGs

8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
12	Ensure sustainable consumption and production patterns
13	Take urgent action to combat climate change and its impacts
17	Strengthen the means of implementation and revitalize the global partnership for sustainable development

Results and outcomes

The 3GF Industrial Symbiosis partnership, led by International Synergies Limited, highlighted the successes of emerging industrial symbiosis activity in Africa. Participants highlighted industrial symbiosis as a powerful vehicle for supporting SMEs and creating jobs. New business start-ups and entrepreneurs are seeing an opportunity to capture value from ‘waste.’ Policies such as a ban on landfilling organic materials or increasing disposal costs, also drive change.

To scale and accelerate industrial symbiosis in Africa, next steps require getting the policy context right and the message to industry that this is good for business. The European Commission now recognizes industrial symbiosis as a tool to deliver the circular economy through innovation, regional economic development and entrepreneurship in addition to resource efficiency and waste reduction, but developing economies have the opportunity to build industrial symbiosis into policy frameworks at an earlier stage. Building on south-south cooperation, African nations have the opportunity to take an integrated, cross-departmental approach to instigate supportive policies informed by practice on the ground.

“It is imperative that if industrial symbiosis is to succeed in Kenya, it must involve a broad range of relevant players in which the government “*contextually steers*” industrial symbiosis through regulatory innovation and ecologizing of its institutions, as non-state actors “*row the boat*”.

Industrial symbiosis has been found to support the development of micros and SMEs, and encourage informal economic actors' participation in the formal economy. A question is sometimes raised about the sustainability of a public investment facilitating industrial symbiosis models: evidence shows under a commercial model that outputs, SME and micro participation and innovation decrease dramatically. Local, regional and national governments spend substantial amounts to improve the environment, create jobs, attract inward investment, reduce carbon, boost exports, lower imports, and encourage innovation. The most cost effective way to produce the above benefits and generate net income from bigger tax revenues for governments is industrial symbiosis. In addition industrial symbiosis helps create the business opportunities that encourage companies to invest and create a demand pull on eco-innovation.

The challenges of imposing a western model of development on African nations was raised repeatedly in plenary sessions. In northern/western economies, industrial symbiosis is being retrofitted into well-defined economies, and is delivering green growth. For Africa, leapfrog opportunities abound! Focusing on the opportunity opens the door to a socially inclusive groundswell that can change mind-sets and culture.

“Industrial symbiosis fits well with the green economy, we need to get the message to the industrial sector, loud and clear, that this is good for business.”

Finally, the UK Government, via the Foreign and Commonwealth

Office, and International Synergies, in cooperation with UNEP, announced the launch of a project that will see proven industrial symbiosis tools tested in pilots in Africa, Asia and South America in 2015.

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Dr. Jane Nyakang'o, Kenya National Cleaner Production Centre (NCPC), presented on their cleaner production activities; presenting examples of industrial symbiosis that address the critical issue of energy security through the bio-economy (biogas, bioenergy). Business barriers to additional industrial symbiosis were highlighted, including lack of information available to businesses (especially micros and SMEs) and incentives to motivate changes in production and consumption patterns (including enabling policies).

Mr. Anton Cartwright, African Centre for Cities, drew on his expertise around the urban experience on resource efficiency. Focusing on in-depth work in Cape Town, Anton raised the issue of public sector liability around waste management. The private sector response is two-fold: the incumbent industrial waste handling companies' unwillingness to change; and the entrepreneurial 'waste pickers' organizing to capture high value materials in the waste stream. Linking the formal and informal sectors opens the door to a socially inclusive groundswell that can change mindsets and culture. He reminded us that *“waste management is expensive to deliver –not managing waste is even more expensive.”*

Mr. Solly Fourie, Western Cape Government, reported on industrial symbiosis activity in South Africa. Now involving 3 provinces (Western Cape, Gauteng and KwaZulu Natal), over 300,000 tonnes of material have been moved up the waste hierarchy through industrial symbiosis. This success inspired the development of a national industrial symbiosis strategy. Western Cape's industrial symbiosis activity has been supported by extensive cross-department cooperation, involving both economic development and environment at the provincial level, alongside municipalities and the national government.

Drawing on his long history with UNEP, and the move to integrate economy and environment, **Dr. Hussein Abaza of the Egyptian Environmental Affairs Agency**, observed that industrial symbiosis fits well with the green economy. Overcoming the vested interested that want to maintain the status quo is a challenge, alongside changing mindsets and deeply rooted cultures. If not motivated by policy, transitioning to a green economy to change consumption and production patterns will be done out of necessity.

Ms. Vanessa Redmond, UK's Deputy Permanent Representative to the UN, announced the launch of the Global Industrial Symbiosis Programme (GISP) for International Synergies Limited, in cooperation with UNEP, to develop an institutional capacity-building framework for rapid, large-scale rollout of a proven methodology for networking and collaboration across industries in ODA countries. Supported by the UK Foreign & Commonwealth Office, GISP aspires to incorporate industrial symbiosis into global programmes including UNEP/UNIDO's eco-innovation and Resource Efficiency Cleaner Production (RECPnet) networks, to strengthen the low-carbon green growth agenda.

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