Creative Approaches for Mitigating Environmental Challenges: A Cosmopolitan Localism Perspective

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We have forgotten how to be good guests
How to walk lightly on the earth as its other creatures do.

Barbara Ward

Summary

The detachment of economic growth from environmental challenges has been an active, though challenging, area of endeavor. Various interventions have taken into account the problem involving policymakers in technological and social systems. However, little improvement has occurred. Therefore, this chapter suggests that one approach to tackle this is to promote cosmopolitan localism from the design and fine art perspectives to reduce environmental challenges. Artists and designers are creative and can leverage these creative abilities in many ways. Thus, we further discuss the artists' and designers' role in advancing cosmopolitan localism by showing emerging creative scenarios centered on the recycling and up-cycling of waste materials present in the environment into designed artifacts. These scenarios also exhibit cosmopolitan localism in small, local, open, and connected fibers to promote a sustainable environment.

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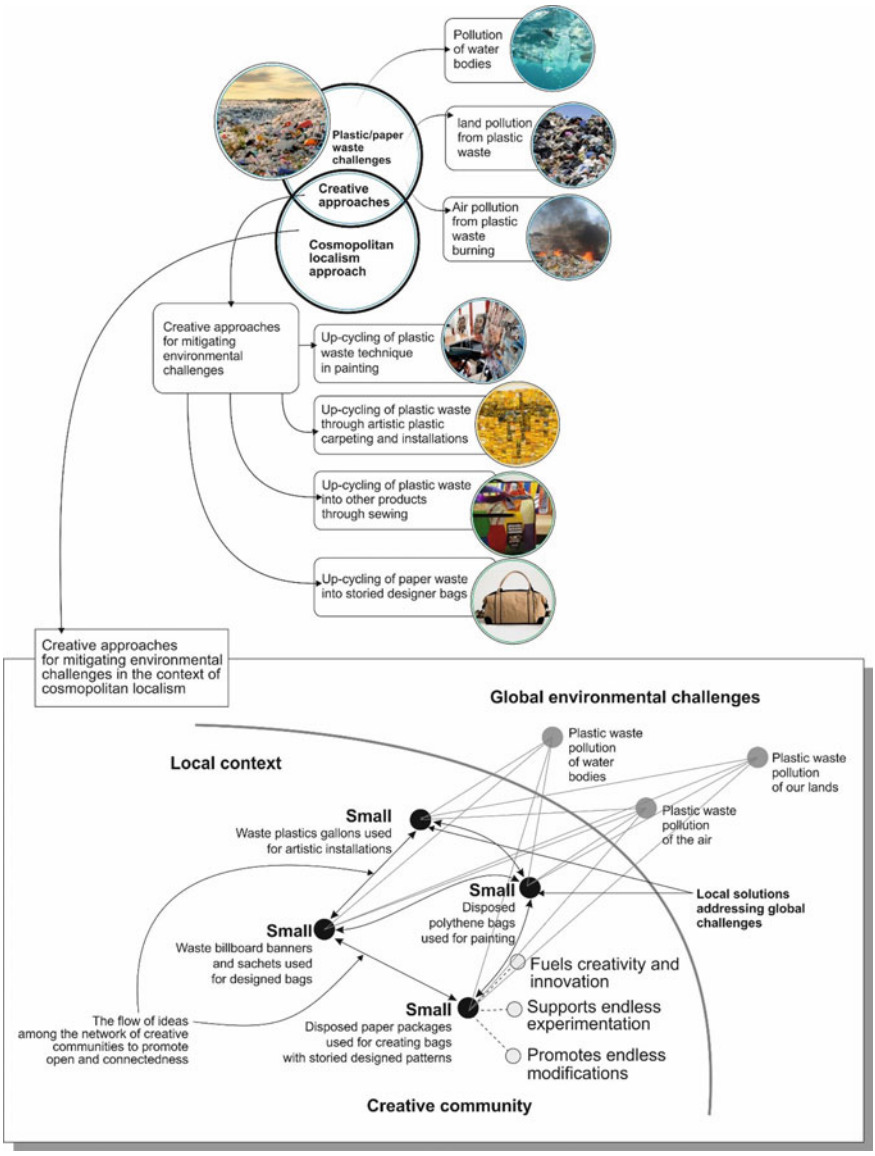

Creative scenarios for mitigating environmental challenges in the context of cosmopolitan localism.

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1 Introduction

The link between economic development and ecological challenges may seem weak. However, the crucial need for product protection from spoiling—partly to enhance profit optimization, puts under the spotlight one of the ubiquitous materials for product protection from decay, namely plastic packaging. The link becomes lucid through probing the materials utilized by designers. There are several traditional packaging materials obtained from natural resources used to manufacture carrier packages, which come with associated challenges resulting from single-use and disposal problems. Other challenges may come about due to the processing and related waste chemical substances, which in some instances flow into rivers and onto the ocean. Another challenge is caused by the fumes from the energy used to power the manufacturing machines that pollute the air. The waste substances discharged into water bodies and the atmosphere threaten the lives of the living organisms on the earth [1]. Apart from the by-products of materials' processing, one aspect of product waste that needs urgent attention is packaging waste due to its high volume. Moreover, it is dispensable and occupies a portion of the solid waste from industries. As other continents endeavor to upscale their economies amid an increase in their population, package production will also shoot up, consequently yielding more waste [2].

Some of these waste materials end up in rivers, streams, and gutters, which poison and cause flooding due to drainage blockage [2]. From the yearly packaging growth (Fig. 1), it is easy to understand that packaging volumes will increase when economic and population growth are factored in the time ahead. Recycling has, therefore, become the exclusive approach to using waste as practiced by western countries. However, some "useful" waste goes untapped, especially in Africa, due to limited recycling infrastructure. In support of the limited infrastructure, The Guardian has disclosed that only 14% of plastic package waste is recycled even on a worldwide scale. Thus, it triggers accountability questions for the rest of the 86% [5]. Though packaging serves as a panacea in advancing growth in the food industry, the end-users are not knowledgeable about its post-usage management [3].

The challenge now is how designers and artists can leverage their creative potential for up-cycling of used packages or other natural materials in different ways to reduce and manage waste. Baldacchino and Cutajar advance an urgent need to shift to a culture that nurtures sustainability to keep the earth's productive system intact, to support current lives and future generations [6]. Fortunately, many stories of artists' environmental sustainability initiatives are in motion and tagged as recycled art and design. It implies that we do not have to start from zero or reinvent the wheel—but we do need to spread the stories to activate the creative thirst for up-cycling and repurposing of plastic or paper waste into artifacts of worth. Therefore, this chapter gives narrations on the various recycled or up-cycled arts and designed products emerging on the African continent. We also advance that the recycled arts and designed products are happening within the context of cosmopolitan localism, which serves as a platform for artists to innovatively and

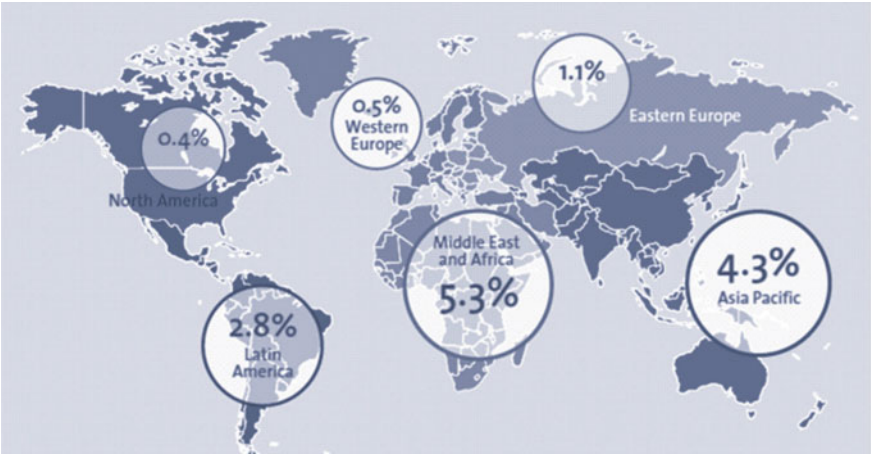

Fig. 1 Forecast of annual packaging volume growth rates (2014–2019) (adapted from [14])

creatively engage in experimenting with different waste materials to understand how to use them. In doing so, a hub can be created to share their innovations for environmental sustainability in the creative arts and design—to promote these practices to become the norm of the day.

2 Cosmopolitan Localism

In the context of environmental sustainability, there are different global models available but limited in practice due to several problems linked to applying a global solution to a local challenge [7]. Several global solutions might not be fruitful when used locally without contextualizing them. Thus, we need to reroute our path to become more resilient to emerging social and economic challenges through deviating from ingrained paths in innovations and creativity [7]. Instead, we must embrace cosmopolitan localism and employ and practice its global ideas through local approaches [7]. Embracing cosmopolitan localism will present several challenges, but we need not reinvent the wheel because there are evolving *concrete experiences that could consolidate and spread to become the most convincing answers to the dramatic challenges that we must now begin to face* [8].

Cosmopolitan localism is based on four main qualities: small, local, open, and connected. Small in the context of cosmopolitan localism connotes linked creative communities that solve similar challenges. Thus due to the linked creative communities, the small concept becomes enlarged when viewed from a connected perspective. In this situation, the small creative communities are easy to manage and control, and that permits the application of global ideas in localized ways. Manzini advances that these are qualities of cosmopolitan localism derived from

"synthesizing the results of 20 years of discussions and concrete experiences, which indicate that there is no hope for designing sustainable solutions without starting from the notions of local and of the community to which this local mainly refers" [8]. Based on his experiences, Manzini advocates that sustainability will only thrive through solutions that factor local approaches in our contemporary dispensation [8]. The need to embrace cosmopolitan localism to advance environmental sustainability serves as the platform for this chapter. We advance that there are already emerging solutions or scenarios that need to be explored and diffused to promote cosmopolitan localism. Therefore, the chapter brings to bear how designers and artists are harnessing their creative abilities to mitigate environmental challenges to change the status quo.

3 Emerging Scenarios for Mitigating Environmental Challenges

Plastic and paper waste materials have been a menace for ages. Some countries have banned plastic use due to its impact on the environment and other living organisms. However, some countries have opted for a flexible approach by educating citizens regarding the issue, while others do not have any strategy. The result is that plastic wastes still occur, littering our environment, choking gutters and water systems, leading to floods, and finally filling the ocean. Some countries have adopted recycling and reuse to mitigate the environmental challenges caused by plastic waste disposal. Among the disciplines that impact plastic waste's up-cycling, among other waste materials, are artistic painting and fashion design in Africa. The following sections give four case details on waste materials up-cycling techniques in South Africa and Ghana.

3.1 Up-Cycling of Plastic Waste Through Artistic Painting

Up-cycling in this chapter comes from cosmopolitan localism centered on advancing a worldwide concept through local means. Thus, the idea of environmental sustainability and its associated mainstream approaches are not cast in stone. Other contextualized approaches are emerging to mirror the same environmental sustainability concept using off-the-grid approaches in Africa. One such approach is the up-cycling of waste materials through creativity. Up-cycling is an approach that sits between upgrading and recycling materials [9]. Up-cycling means creating something new from waste or old materials without any physical transformation of the material. Let us now look at the up-cycling approach used by a painter in South Africa—Mbongeni Buthelezi. Mbongeni Buthelezi, a prominent plastic artist, summed up his technique with the phrase, *"I collect rubbish and create something beautiful from it. I collect something that has no value and give it new life…"* [10]. He collects all sorts of plastic waste and creates a plastic waste bank, as shown in

Fig. 2 Waste plastics gathered by Mbongeni Buthelezi to be used for his plastic collage (adapted from www.pinterest.ch)

Fig. 2, from which he fetches his plastic for his artistic expression. During the collection process, he selects the appropriate plastics he can work with easily.

3.2 Up-Melting of Plastic Waste in Painting: Plastic Collage

Let us now expand on the up-cycling technique by Mbongeni Buthelezi for his plastic impressions. He describes his style as a plastic collage. He first cuts the plastics into strips, then prepares his wooden stretcher, and covers it with several plastic roofing sheets. Using a watercolor approach, he skillfully melts the plastic strips with a heat gun onto the canvas prepared with the roofing plastic. Figure 3 shows Buthelezi at work. What interests him in using waste plastic for his artistic expression is the link to the plastic's "spontaneous" nature and the freshness it brings to the artistic interpretation because of its watercolor-like nature, once applied. This approach does not allow him to experiment "outside" of his mainstream artistic activities. Thus, every piece of plastic he sticks down by melting provides a learning experience. In essence, he develops his style as he works since

Fig. 3 Mbongeni Buthelezi at work (photo by Wanda Hennig [15])

he is a pioneer in plastic usage for artistic expression. He uses approximately five thousand (5000) pieces of plastic in each artwork he produces [10].

This discussion of Mbongeni Buthelezi's approach illustrates how up-cycling of waste plastics that hitherto were either burnt or carried away into water bodies to cause environmental damage turned into valuable art pieces. Apart from the plastic art creations, he travels abroad from time to time to share his knowledge with students and communities and to share his considerable skills at the local community level. Figure 4 shows a masterpiece of this plastic collage technique developed and refined by Buthelezi.

3.3 Up-Cutting of Plastic Waste Through Artistic Plastic Carpeting and Installations

Another artist involved in reducing plastic pollution is Serge Attukwei Clottey from Ghana. He uses gallon drums and has termed his artistic style as "Afrogallonism," an artistic, innovative use of the yellow gallon containers used as cooking oil canisters and then repurposed to collect water or fuel [11]. He cuts the gallons into pieces and then creates holes at the edges to facilitate sewing the pieces of plastics and a strong thread. He paints some of the plastic pieces based on the concept he wants the carpeted plastic pieces to convey. Figure 5 shows an artistic carpeted-plastic artwork installation by Serge Attukwei Clottey, while Fig. 6 represents an artistically sewn plastic carpet.

Fig. 4 Mbongeni Buthelezi's plastic collage sample works [16]

Fig. 5 Plastic carpet artwork installation by Serge Attukei Clottey (photo by Serge Attukei Clottey [11])

Fig. 6 Sown plastics forming an artistic carpet by Serge Attukei Clottey (photo by Serge Attukei Clottey [17])

3.4 Up-Sewing of Plastic Waste into Designer Products

This type of up-cycling is not only artistic but also represents an innovative approach. Among the companies engaged in up-cycling of plastic waste into products is Trashy Bags. Trashy Bags is a social-environmental enterprise based in Accra, Ghana, that up-cycles waste plastics into bags and souvenirs [12]. The designers collect, clean, and stitch plastic trash such as water and fruit juice sachets into esthetically pleasing and durable bags, among others [12]. The enterprise also makes bags from used advertising billboard banners, and designers have collected and up-cycled approximately twenty million plastic sachets since 2007 [12]. Every month about two hundred thousand (200,000) plastic sachets are collected and up-scaled into laptop bags, messenger bags, backpacks, and other everyday use bags [12].

The central motive for up-cycling is not only business-driven (profit) but also to aid in the reduction of plastic waste management in Ghana [12]. Only two percentage is recycled, while the ninety-eight percentage ends up polluting the environment and destroying water bodies [12]. These examples of up-cycling in Africa testify to the need for revamping innovative approaches to tackle the environmental challenges caused by plastic waste on the continent through up-cycling options. Through comparing the volume of the plastic waste generated against the percentage recycled, it is clear that the up-cycling strategies may process but a handful of the overall plastic waste generated. Thus, up-cycling can be considered an additional solution to support existing permanent recycling plans from waste management companies.

3.5 "Up-Storying" of Waste Paper into Durable Design-Storied Bags

A second sustainable environmentally inclined business from South Africa is called Wren Design. This company takes ordinary waste papers/paper packaging and reimagines them through folding, stitching, fusing, and coating with water-resistant materials into durable storied bags [13]. The storied bags' concepts are in the designed patterns of the bags, the construction methods, and the continuous product development, which make them unique. Thus, every design pattern on the bag carries a story. These storied bags are patented; however, the process of up-cycling the paper waste into durable materials is open and can be practiced by those who are interested. Figure 7 shows the storied paper waste bags designed by the founder of Wren Design.

Fig. 7 Storied waste paper designer bags [13]

4 Innovative Up-Cycling Strategies through the Lens of Cosmopolitan Localism: Toward Conceptualizing Up-Cycling Innovations for Environmental Sustainability

All four cases could show how innovative and environmentally conscious African artists and designers contribute their quota to reducing plastic and paper waste in two countries on the continent. These up-cycling strategies show alternative approaches to plastic and paper waste reduction, developed by artists and designers harnessing their unique creative abilities that embrace the concept of cosmopolitan localism. Up-cycling on its own is not the long-term solution to the environmental plastic waste challenge. In conjunction with organized, official measures, it functions as an additional measure to reduce plastic and paper waste pollution and serves as an income stream for some designers, artists, and ordinary people in Ghana and South Africa. Let us now look at these four cases in the context of *small, local, open, and connected,* which are the pillars of cosmopolitan localism.

4.1 Innovative Up-Cycling of Plastic and Paper Waste in the Context of Small

When four cases become perceived in the context of small, it manifests in the volume of artifacts produced innovatively and the working space and materials allocated for the creative—or the design work. It implies that designed artifacts occur on a small scale in small working spaces, not in factory settings. In cosmopolitan localism, small relates to fueling artistic and designerly innovations through experimentation and an open-ended perspective. Whatever artifact is produced in the small context, it may be seen to be an experimental piece that can be modified endlessly to suit a new context.

On the other hand, small is not small from a technological perspective or from disseminating information and marketing perspectives. All four cases discussed for their innovative approaches regarding the mitigation of plastic and paper waste are available on the internet. The idea behind the online presence of these innovative businesses is not only to market the products but also to educate the public about the possibility of engaging in similar creative work to generate income and foster environmental consciousness in sustainability. Thus, the internet has become the visual hub for connectivity among the actors facilitating cosmopolitan localism.

As other people in Ghana and South Africa engage in similar creative work toward environmental sustainability, the number of people practicing waste up-cycling in art and design will increase. Thus, the picture painted at the end of the day will be a network of small creative nodes with artists and designers working on similar projects. When all the innovation nodes within the local context come together, they will no longer be small, as advanced by Manzini [7]. The small concept also equips the actors in the nodes with the freedom to experiment, driven by the motivation to obtain (similar) desirable results, yet with room for endless modifications, as shown in Fig. 8. The nodes thus become creative communities with endless possibilities in terms of sustainable environmental approaches.

4.2 Innovative Up-Cycling of Plastic Waste in the Context of Local

The cosmopolitan localism concept regarding up-cycling in the four cases described unearths the uniqueness and diversity of creativity driven by the availability of local waste materials. The waste materials used in these four cases illustrate the kinds of waste material available within a locality. The innovative approach is leveraged for converting waste into artifacts of worth. Thus, the transformed products inherently bear the mark of the waste materials which were locally harvested. Though the artifact produced might have local tags, the concept of up-cycling has a global underpinning anchored to environmental sustainability and, in these cases, available to a global market to a greater or lesser extent. Therefore, the local essence is not necessarily only locally focused but globally "acted" in its availability. The four cases discussed show that the abundance of local materials triggers local ideas with

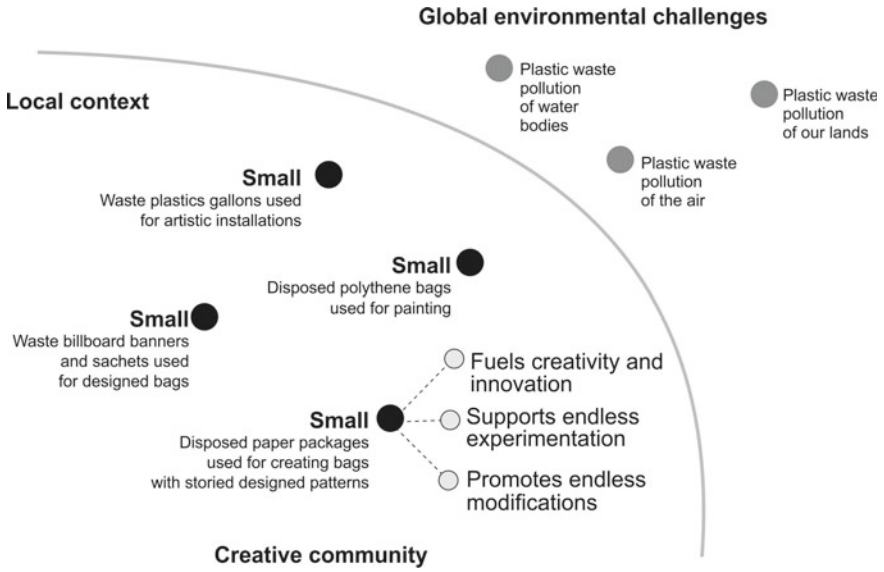

Fig. 8 "Small" manifestation and benefits in up-cycling of plastic and paper waste

international essence, which bridges the gap between local creativity and global connectivity.

Manzini (2010) advanced that in the context of localizing global concepts, the local ceases to be local anymore. However, we hold a more nuanced view. Using a local lens to address a global challenge or spearhead a global concept does not necessarily transform the local artifact into a global artifact; it will retain provenance. Thus, local remains local since the up-cycled product becomes unique due to the quality and creativity attached to a specific milieu. The local rather becomes a yarn woven into the global fabric of innovative approaches for advancing sustainable environmental practices. Therefore, the local innovative up-cycling approaches are recognized as part of the global cloth for addressing challenges in situationally fitting ways. In other words, global challenges emanate from different locales and require local solution-inclined approaches, as witnessed in the four enterprises discussed. In a nutshell, the concept of local up-cycling in the framework of cosmopolitan localism represents a global phenomenon adapted and applied contextually to have a global impact (even if limited) in addressing environmental challenges, as shown in Fig. 9.

4.3 Innovative Up-Cycling of Plastic Waste in the Context of Open and Connected

Open in the context of cosmopolitan localism signifies the creative communities' actors' open-mindedness and ability to welcome a global flow of ideas or concepts

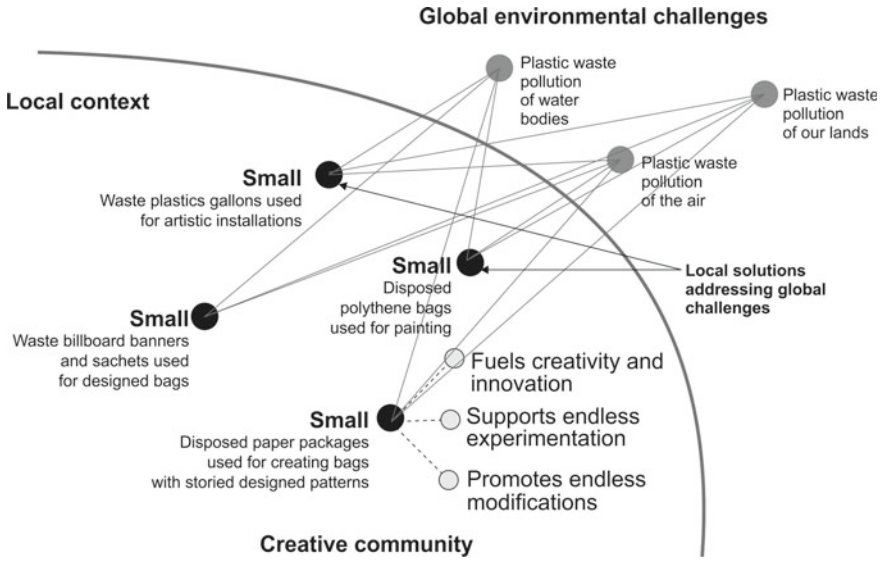

Fig. 9 Local solutions with global impact

into their locality. These are ideas practically implemented using indigenous materials, especially in the area of design. Localizing global ideas requires rethinking a specific perspective and developing home-grown solutions that reflect these ideas. The environmentally sensitive and innovative approaches discussed in this chapter illustrate the creative communities' open mindset, which contributes to making their innovations relevant in the world. This open mindset (which is asset-based) strengthens the locals' socio-technical systems and makes them dynamic, solution-oriented, and resilient in an era where sustainable challenges emerge in various forms.

The artists' and designers' flexible styles create room for connectedness among concurring local actors and those who learn from them through access to technology and the internet. The access to countless creative communities' innovations shared on the internet also creates an avenue for fueling other local actors' imaginations and innovations in birthing similar creative communities through design adaptation. Thus, technology in the form of the internet serves as a hub for triggering and fueling actors to expand creative communities' networks. When perceived on a larger scale, these up-cycling creative communities form a network focused on solutions toward environmental challenges, making them stronger and resilient, as captured in Fig. 10. These creative communities' innovative approaches position them as dynamic design instruments ready to tackle uncertainties in the future by harnessing their abilities for alternative solutions that are locally based.

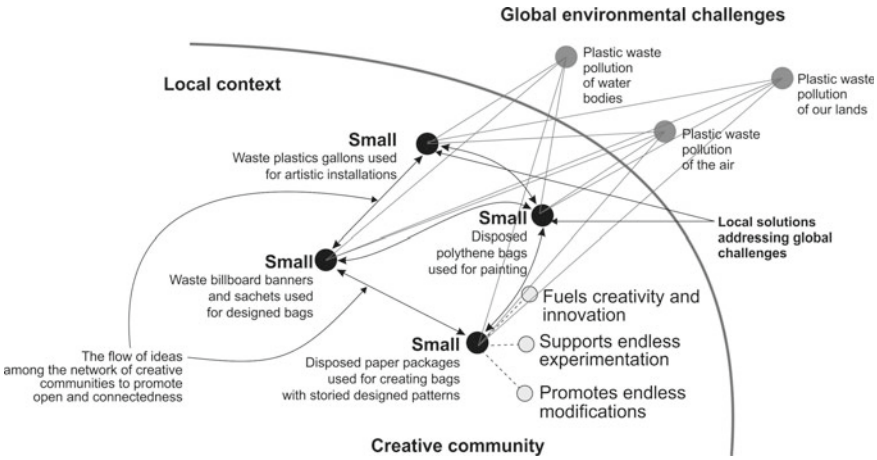

Fig. 10 The flow of ideas among the network of creative communities to promote openness and connectedness

5 Conclusion

It has been difficult, if not impossible, to detach plastic waste generation resulting from an economic activity from such activity. Economic development, manufacturing, and packaging seem to go hand in hand. However, the emerging creative and sustainable product scenarios discussed in South Africa and Ghana show hope for the future. Artistic up-cycling approaches to plastic waste fuel the hope of more artifacts of worth being derived from such waste. Driven by the framework of cosmopolitan localism, the up-cycled plastic-waste approaches resulting in desirable artwork and products, coupled with the creatives' vision, show traces of small, local, open, and connected fibers which promote environmental sustainability and make the local and global inseparable.

Core Messages

- Artists and designers need to explore the options available in local and valuable waste materials actively to contribute to the reduction of environmental challenges.
- Artists' and designers' websites must feature skills sharing to promote skills transfer worldwide for a collective plastic waste reduction approach.
- Artists' and designers' creative work and approaches should reduce global environmental degradation caused by waste, even if to a small degree.
- Creatives need to work collaboratively to establish a waste laboratory that incubates creative up-cycling techniques that can be disseminated worldwide to help them think locally and act globally.

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